# Model exam (Alg.)

## [1] Complete :

a) $\frac{3-x}{x+2}$ = zero if $\chi$ = .....

b) The degree of the algebraic term $6x^2y^3$ is.....

c) The additive inverse of the number $\left|\frac{-3}{5}\right|$ is .....

d) -8 X exceeds 5 X by .....

e) $(12x^3 \div 4x) \times$ .....= $6x^4$ .

## [2] Choose the correct answer :

1) $\frac{-2}{5} \times n = 1$ Then n = .....

a) $\frac{5}{2}$ b) $\frac{-5}{2}$ c) $\frac{2}{5}$ d) $\frac{-2}{5}$

2) The rational number ..... lies in half way between $\frac{1}{2}$ and $\frac{7}{8}$

a) $\frac{11}{16}$ b) $\frac{5}{8}$ c) $\frac{3}{4}$ d) $\frac{1}{2}$

3) $\frac{3}{x+2}$ is a rational number then $x \neq$ .....

a) zero b) -3 c) 2 d) -2

4) Express $\frac{4}{11}$ as a decimal .....

a) 0.36 b) 0.363 c) 0.36 d) 0.036

5) If $\frac{x}{y} = \frac{2}{5}$ Then : 5 x – 2 y = .....

a) $\frac{2}{5}$ b) $\frac{5}{2}$ c) 1 d) zero

**[3]** a) **Add :** 3 x – 5 y – 6 and 3 y + 2 x + 5

b) Use distributive property to find : $\frac{5}{9} \times 11 + \frac{5}{9} \times 8 - \frac{5}{9}$

c) The length of a rectangle is 5 x cm and its width is 3x cm . calculate its area .

**[4]** a) Subtract : $6x^2 + 2x - 5$ from $2x^2 - 3x + 4$

b) If $a = \frac{3}{4}$ , $b = -\frac{1}{2}$ find the value of $(a + b) \div (a - b)$

c) Find three rational numbers between $\frac{1}{2}$ , $\frac{1}{3}$

# Exam ( 1 )

## Choose the correct answer

| | |
|---|---|
| 1 | The algebraic term $7xy^3$ whose degree is ..... ( 1 , 2 , 3 , 4 ) |
| 2 | If the area of a rectangle is $18x^3\ cm^2$. And its length = $6x^2$ cm., then its width = ..... cm. ( $3x$ , $3x^2$ , $3x^5$ , 3 ) |
| 3 | If $x^2 = 16$ , $y^2 = 9$ and $xy = 12$ , then $(x-y)^2$ = ..... ( 49 , 165 , $-1$ , 1 ) |
| 4 | If $\frac{x+3}{x-7} = 0$ , then the value of $x$ is ..... ( 3 , $-7$ , $-3$ , 7 ) |
| 5 | If $(x-6)(x+6) = x^2 + k$ , then $k$ = ..... ( $-10$ , 36 , 10 , $-36$ ) |
| 6 | The highest common factor of the expression $3x^2y - 6x$ is ..... ( $3x$ , $6x$ , $3xy$ , $xy-2$ ) |
| 7 | If $5a = 45$ , $ab = 1$ , then $b$ = ..... ( $\frac{1}{9}$ , 5 , $\frac{1}{5}$ , 9 ) |
| 8 | $(x^2+x) \div x$ = ..... Where $x \neq 0$ ( zero , $x$ , $2x+1$ , $x+1$ ) |
| 9 | the perimeter of the rectangle whose dimensions are $(2x+1)$ cm. and $(3-2x)$ cm. is ..... cm ( $2x$ , 4 , $x$ , 8 ) |
| 10 | $(-3x) \times (-5y)$ = ..... ( $-15xy$ , $-8xy$ , $8xy$ , $15xy$ ) |
| 11 | The number $\frac{x+3}{x-7}$ is rational number if $x \neq$ ..... |
| 12 | $12x^2y^3 \div 4xy$ = ..... |
| 13 | The multiplicative inverse of $1\frac{2}{3}$ is ..... |
| 14 | If the order of the median of the values is fourteenth , then the number of these values is ..... |
| 15 | $5x^2 + 15xy = 5x$ ( ..... + ..... ) |

## *Answer the following questions*

| | |
|---|---|
| 1 | *If* $x + y = 5$ *, then the numerical value of* $x^2 + 2xy + y^2$ <br> ..... <br> ..... |
| 2 | *Divide :* $21x^2y + 9xy^2 - 12x^2y^3$ *by* $3xy$ *where* $(xy \neq 0)$ <br> ..... |
| 3 | *simplify :* $(x+2)^2 - 4x$ *, then find the numerical value of the result when* $x = 1$ <br> ..... <br> ..... |
| 4 | *Subtract :* $-x^2 + y^2 - 3xy$ *from* $x^2 - 2xy + 3y^2$ <br> ..... <br> ..... |
| 5 | *Factorize the expression by identifying the H.C.F :* $12x^2y^3 + 18xy^2$ <br> ..... |
| 6 | *Use the distribution property to find :* $\frac{5}{17} \times 10 + \frac{5}{17} \times 23 + \frac{5}{17}$ <br> ..... <br> ..... |
| 7 | *If the mode of the values* $a+2$ *,* $a+1$ *,* $a+3$ *,* $a+2$ *equals* $12$ *, then* $a$ = ..... |

# Exam ( 2 )

## Choose the correct answer

| | |
|---|---|
| 1 | The middle term in the expansion of $(2x-5y)^2$ is ..... ( $-10x^2y^2$ , $10x^2y^2$ , $20xy$ , $-20xy$ ) |
| 2 | The degree of the algebraic expression : $3x^2+5xy^2+6y^2$ is ..... ( zero , second , third , fourth ) |
| 3 | The additive inverse of the number $\frac{1}{3}$ is ..... ( $\frac{3}{10}$ , $0.3$ , $3$ , $-0.\dot{3}$ ) |
| 4 | The base length of a triangle is $2x$ cm. and its height is $6y$ cm., then its area Is ..... $cm^2$ ( $12xy$ , $8xy$ , $6xy$ , $4xy$ ) |
| 5 | If $a \times \frac{b}{3} = \frac{a}{3}$ , then $b$ = ..... ( $\frac{a}{3}$ , $0$ , $a$ , $1$ ) |
| 6 | $(15x^4+5x^3) \div 5x^3$ = ..... ( $3x^2+x$ , $5x^2+1$ , $3x+1$ , $4x^4$ ) |
| 7 | The multiplicative inverse of $\left(\frac{1}{2}\right)^0$ is ..... ( $2$, $-2$ , $1$ , $-1$ ) |
| 8 | If the arithmetic mean of 6 values is 12 , then the sum of theses values = ..... ( 2 , 6 , 18 , 72 ) |
| 9 | $x+x+x$ = ..... ( $3x^3$ , $3x$ , $x^3$ , $x+3$ ) |
| 10 | the simplest form of the expression $(x-4)(x+4)+16$ is ..... ( $x^2+4$ , $x^2-4$ , $x^2$ , $4$ ) |
| 11 | The rational number which hasn't a multiplicative inverse is ..... |
| 12 | The reminder of subtracting $-7x^2$ from $2x^2$ is ..... |
| 13 | The H.C.F of $12x^3+6x^2$ is ..... |
| 14 | $9\,a^7\,b^4$ = .....$\times\, a^7\,b$ |
| 15 | If $\frac{x}{y}=1$ , then $5x-5y$ = ..... |
| 16 | $100\,\% - \frac{1}{4}$ = ..... |

## *Answer the following questions*

| | |
|---|---|
| 1 | *find three rational numbers between :* $\frac{3}{5}, \frac{1}{4}$ |
| 2 | *simplify to the simplest form :* $(x+5)^2+(x+2)(x-2)$ |
| 3 | *Use the distribution property to find :* $\frac{7}{12}\times\frac{23}{45}+\frac{17}{12}\times\frac{23}{45}-2\times\frac{23}{45}$ |
| 4 | *What is the decrease of :* $3y^2-2xy+x^2$ *than* $3x^2-5xy+y^2$ |
| 5 | *Factorize by taking out the H.C.F :* $3x^2y-6xy^2+9xy$ |
| 6 | *if the arithmetic mean of the values :* $8, 7, 5, 6, 4, k+5$ *is* $6$, *find* $k$ |
| 7 | *If* $x+3$ *is one factor of* $2x^2+3x-9$, *find the other factor* |

# Exam ( 3 )

## Choose the correct answer

| | |
|---|---|
| 1 | ..... Is a terminating decimal ( $\frac{7}{20}$ , $\frac{2}{11}$ , $\frac{7}{11}$ , $\frac{1}{3}$ ) |
| 2 | If $(x+y)^2 = 26$ and $x^2 + y^2 = 20$, then $xy$ = ..... ( 3 , 6 , 9 , 12 ) |
| 3 | The multiplicative inverse of the number ..... Is itself ( $-1$ , 0 , 2 , 3 ) |
| 4 | $12x^2 \div (-x)$ = ..... ( $12x$ , 12 , $-12x$ , $-12$ ) |
| 5 | Half of $2^{100}$ = ..... ( $2^{98}$ , $2^{99}$ , $4^{100}$ , $2^{50}$ ) |
| 6 | the degree of the algebraic expression : $3x^2y^2 + 5x^2y - 2xy$ is ..... ( second , third , fourth , fifth ) |
| 7 | if half of a number is 30 , then $\frac{3}{4}$ of this number is ..... ( 48 , 42 , 40 , 45 ) |
| 8 | if $x + y = 7$, then $5x + 5y$ = ..... ( 7 , 25 , 5 , 35 ) |
| 9 | $(6x \div x) +$ ..... $= 0$ (where $\neq 0$) ( $5x$ , $-5x$ , $6x$ , $-6$ ) |
| 10 | If $(x-3)(x+3) = x^2 + K$ , then $K$ = ..... ( $-9$ , 3 , 6 , 9 ) |
| 11 | $5x^2 + 15xy = 5x$ ( ... ... + ... ... ) |
| 12 | $\frac{4}{5}$ = .....% |
| 13 | $(3x+2)(x-4) = 3x^2$ ..... $-8$ |
| 14 | $(x-7)(x+7)$ = ..... |
| 15 | The coefficient of the algebraic term $(-5xy^2)$ is ..... |
| 16 | $(3x-y)(2x+5y) = 6x^2 + 13xy$ ..... |

## *Answer the following questions*

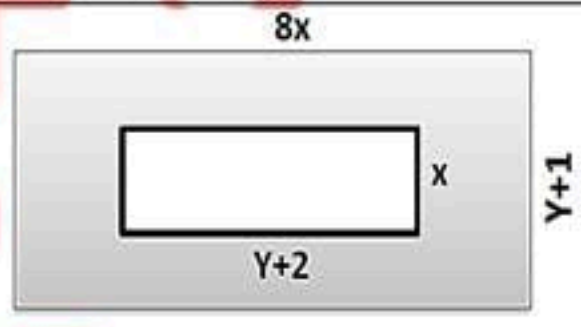
| | |
|---|---|
| 1 | *If the median of the values* $a+3$ , $a+2$ , $a+4$ *is* 8 , *find the value of* $a$<br>..... |
| 2 | *find a rational number lying at one third way between* $\frac{4}{7}$ , $1\frac{3}{4}$ *from the side of the smaller number.*<br>.....<br>.....<br>..... |
| 3 | *What is the increase of* $7x+5y+z$ than $2x+6y+z$<br>.....<br>..... |
| 4 | *Simplify to the simplest form:* $(5x-6)^2+60x-36$<br>.....<br>..... |
| 5 | *Divide :* $6x^3-2x^2$ *by* $2x$ , $x \neq 0$<br>.....<br>..... |
| 6 | *find 2 rational numbers lying between :* $\frac{1}{2}$ *and* $\frac{4}{3}$ , *one of them is rational , the other is an integer*<br>.....<br>..... |
| | *prove that the number* $\frac{5}{12}$ *lies between* $\frac{1}{3}$ *and* $\frac{1}{2}$<br>..... |

# Exam ( 4 )

## Choose the correct answer

| | |
|---|---|
| 1 | if $x+2y=5$ , then $x+2(3+y)=$ ..... ( 5 , 6 , 11 , 15 ) |
| 2 | if $\frac{\lvert x\rvert}{5}=3$ , then $x=$ ..... ( 5 , 10 , 15 , $\pm 15$ ) |
| 3 | $\frac{1}{2}\times\frac{2}{3}\times\frac{3}{4}\times$ ..... $\times\frac{99}{100}=$ ..... ( $\frac{1}{2}$ , $\frac{3}{4}$ , $\frac{99}{100}$ , $\frac{1}{100}$ ) |
| 4 | If the arithmetic mean of the marks of 5 studesnts is 20 , then the sum of their marks is ..... ( 100 , 4 , 5 , 20 ) |
| 5 | if $\frac{5}{7}+\frac{x}{2}=\frac{25}{35}$ , then $2x=$ ..... ( 2 , $\frac{5}{7}$ , zero , $\frac{11}{2}$ ) |
| 6 | $(15x^4+5x^3)\div 5x^3=$ ..... ( $3x^2+x$ , $3x^2+1$ , $3x+1$ , $4x^4$ ) |
| 7 | If $2b$ is the edge length of a cube , then its volume is ..... ( $8b$ , $2b^3$ , $8b^3$ , $6b^3$ ) |
| 8 | the additive inverse of the number $x+2$ is ..... ( $x-2$ , $-x-2$ , $2-x$ , 2 ) |
| 9 | A rectangle , its length = $4x$ cm . and its width = $3x$ cm. , then its area = ..... ( $7x$ , $12x$ , $12x^2$ , $14x$ ) |
| 10 | the multiplicative inverse of the number $3\frac{2}{5}$ is ..... ( $-3\frac{2}{5}$ , $3\frac{2}{5}$ , $\frac{17}{5}$ , $\frac{5}{17}$ ) |
| 11 | If $(2x+y)^2=4x^2+kxy+y^2$ , then $k=$ ..... |
| 12 | The degree of algebraic term $7^2 x y^2$ is ..... |
| 13 | if $\frac{a}{b}=\frac{1}{2}$ , then $2a-b=$ ..... |
| 14 | The number 1.25 in the form of $\frac{a}{b}$ is ..... |
| 15 | $6x^2y^3\times$ ..... $=24x^4y^6$ |
| 16 | $\mathbb{Q}^+-\mathbb{Q}^-=$ ..... |

## *Answer the following questions*

| | |
|---|---|
| 1 | *find the sum of :* $5x + 2y - 1$ *and* $2x - 5y + 3$ <br> ..... <br> ..... |
| 2 | *find The arithmetic mean of the values* $2 - a$ , $4$ , $1$ , $5$ , $3 + a$ <br> ..... <br> ..... |
| 3 | *Find four rational numbers between zero and* $\frac{3}{5}$ <br> ..... <br> ..... |
| 4 | *Find the value of K which makes the expression :* $x^2 + 5x + K$ *divided by* $x + 2$ <br> ..... |
| 5 | $1, 1, 2, 3, 5, 8,$ ..... ( *in the same pattern* ) |
| 6 | *if* $x + 5y = 6$ , $z = 2$ , *find the numerial value of* $x + 5(y + z)$ <br> ..... <br> ..... |
| 7 | *Find the area of shaded part* <br> ..... <br> ..... <br> ..... <br>   |

# Exam ( 5 )

## Choose the correct answer

| | |
|---|---|
| 1 | the multiplicative inverse of $0.\dot{4}$ in the simplest form is ..... ( $\frac{4}{9}$ , $\frac{9}{4}$ , $\frac{2}{5}$ , $\frac{5}{2}$ ) |
| 2 | if $\frac{a}{7} > \frac{b}{9}$ , then 9 a ..... 7 b ( $>$ , $<$ , $\leq$ , $=$ ) |
| 3 | If $x = -1$ , then the numerical value of the expression $(x+1)^2$ is ..... ( 0 , 1 , 2 , 3 ) |
| 4 | The necessary condition to make $\frac{7}{2x-10}$ a rational number if $x \neq$ ..... ( $-7$ , 5 , $-5$ , 10 ) |
| 5 | The degree of the algebraic term $(2y^2x)^2$ is ..... ( 3 , 4 , 5 , 6 ) |
| 6 | if $(x+2)(x-2) = x^2 + kx - 4$ , then $k =$ ..... ( $-4$ , zero , 4 , 8 ) |
| 7 | The length of a rectangle is $2x$ cm. and its width is $y$ cm. , then its perimeter = ..... ( $2xy$ , $3xy$ , $2x+y$ , $4x+2y$ ) |
| 8 | $-3(y+3) =$ ..... ( $-3y+6$ , $-3y-9$ , $-3y-6$ , $-3y$ ) |
| 9 | if $2x = 10$ , then $\frac{3}{5}x =$ ..... ( 25 , 15 , 5 , 3 ) |
| 10 | If $\frac{4}{6} = \frac{12}{x}$ , then $x + 2 =$ ..... ( 18 , 20 , 16 , 3 ) |
| 11 | the arithmetic mean of the values 5 , 4 , 8 , 3 and 10 is ..... |
| 12 | If three times a number is 15 , then fifths this number is ..... |
| 13 | The additive identity element in $\mathbb{Q}$ is ..... |
| 14 | The median of the values : 5 , 9 , 7 , 4 , 3 , 8 is ..... |
| 15 | $2\frac{1}{5} \times$ ..... $= 1$ |
| 16 | The result of subtracting $2x$ from $-3x$ is ..... |

## *Answer the following questions*

| | |
|---|---|
| 1 | $1, 4, 9, 16, \ldots\ldots\ldots, \ldots\ldots\ldots$ *(in the same pattern )* |
| 2 | *Divide :* $14x^2y - 35xy^2 + 7xy$ *by* $7xy$<br>……<br>…… |
| 3 | *If the arithmetic mean of the numbers :* $8, 7, 5, 9, 4, 3, k + 4$ *is* $6$, *then find the value of* $k$<br>……<br>…… |
| 4 | using the distributive property to find : $\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \frac{-3}{7}$<br>……<br>…… |
| 5 | *If the area of a rectangle is* $3x^2 + 7x + 2$ *and its length is* $3x + 1$ , *find its width*<br>…… |
| 6 | *find :* $(x+2)^2 - 4(x+1)$ , *then find the numerical value of the result when* $x = 2$<br>……<br>…… |
| 7 | *The greatest negative number is* …… |

# Exam ( 6 )

## Choose the correct answer

| | |
|---|---|
| 1 | the rational number that lies half the way between $\frac{1}{2}$ , $\frac{3}{4}$ is ..... ( $\frac{1}{4}$ , $\frac{1}{5}$ , $\frac{5}{8}$ , $\frac{1}{6}$ ) |
| 2 | If $\frac{x}{y} = \frac{2}{3}$ , then $\frac{3x}{2y}$ = ..... ( $\frac{1}{5}$ , $\frac{3}{2}$ , $\frac{9}{4}$ , 1 ) |
| 3 | the algebraic term : $3\,x\,y^m$ is of the fifth degree , then $m$ = ..... ( 4 , 5 , 2 , 3 ) |
| 4 | if $\frac{3}{a} < \frac{3}{b}$ , where $ab > 0$ , then $a$ ..... $b$ ( $>$ , $<$ , $\leq$ , $=$ ) |
| 5 | If 6 , 5 , 12 and $x$ are proportional numbers then $x$ = ..... ( 8 , 10 , 5 , 7 ) |
| 6 | if the algebraic expression : $ax^3 + 4x^2 + 3x$ is of the second degree , then $a$ = ..... ( 1 , 3 , $-2$ , zero ) |
| 7 | If the arithmetic mean of the numbers : 5 , 8 , 7 , $k$ , 9 , 3 is 6 , then $k$ = ..... ( 3 , 4 , 5 , 6 ) |
| 8 | $0.7 + 0.\dot{3}$ = ..... ( 1 , 3.7 , $0.\dot{3}\dot{7}$ , $1\frac{1}{30}$ ) |
| 9 | $(3a + 2b)^2 = 9\,a^2 +$ ..... $+ 4\,b^2$ ( $6\,ab$ , $12\,ab$ , $24\,ab$ , $36\,ab$ ) |
| 10 | $(-5x) + (-3x) - x$ = ..... ( $-9x$ , $9x$ , $8x$ , $-8x$ ) |
| 11 | $5x + 5y = 30$ , then $x + y$ = ..... |
| 12 | If the arithmetic mean of the numbers : 8 , 7 , 5 , 9 , 4 , 3 , $k + 4$ is 6 , then the value of $k$ = ..... |
| 13 | The additive inverse of $\left(\frac{-3}{5}\right)^0$ is ..... |
| 14 | the mode for the values : 2 , 4 , $k - 3$ is 4 , then $k$ = ..... |
| 15 | $(x - 5)($ ..... $) = x^2 - 25$ |
| 16 | the number $\frac{x-4}{x+4}$ is a rational number if $x$ ..... |

## *Answer the following questions*

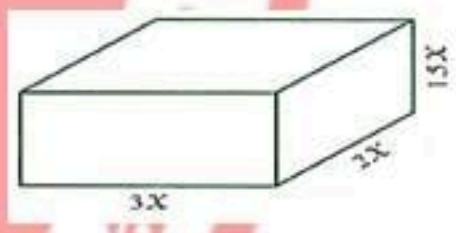
| | |
|---|---|
| 1 | *Factorize by identifying the H.C.F* : $4x^3y^3 - 6x^2y^2 + 2xy$ <br> ..... <br> ..... |
| 2 | *Find three rational numbers between* : $\frac{1}{2}$ , $\frac{1}{3}$ <br> ..... <br> ..... |
| 3 | 12% *of* 500 *kg.* = ..... *kg.* |
| 4 | *find the quotient of dividing* : $6x^2 + 13xy + 6y^2$ *by* $2x + 3y$ , $(2x + 3y \neq 0)$ <br> ..... |
| 5 | *If the arithmetic mean of the values* : 8 , $k$ , 7 , 5 *is* 6 , *find value of* $k$ <br> ..... <br> ..... |
| 6 | *Use the properties of addition of rational numbers to find* <br> $\frac{5}{4} + \left(\frac{-13}{5}\right) + \left(\frac{-25}{4}\right) + \frac{28}{5}$ <br> ..... <br> ..... |
| 7 | *If* $x = \frac{1}{2}$ , $y = \frac{-2}{3}$ , $z = 2$ , then find the value of $\frac{y-z}{x}$ <br> ..... <br> ..... |

# Exam ( 7 )

## Choose the correct answer

| | |
|---|---|
| 1 | $\frac{y^5}{y^3} + y^2 =$ ..... , where $y \neq 0$ ( $y^6$ , $y^5$ , $2y^2$ , $2y^3$ ) |
| 2 | $\left\|-\frac{3}{5}\right\|$ ..... zero ( $<$ , $=$ , $>$ , $\leq$ ) |
| 3 | The rational $\frac{x}{-3}$ is positive if $x$ ..... ( $<0$ , $>0$ , $\leq 0$ , $\geq 0$ ) |
| 4 | Fifths the number $5^{10}$ = ..... ( $5^9$ , $5^5$ , $5^{11}$ , $3^9$ ) |
| 5 | the rational number that lies on third of the way between 8 and 12 from the smaller is ..... ( $8\frac{1}{3}$ , $9\frac{1}{3}$ , 10 , $10\frac{2}{3}$ ) |
| 6 | if $(x+4)(x-3) = x^2 + m - 12$ , then $m =$ ..... ( $-x$ , $x$ , $-7x$ , $7x$ ) |
| 7 | The decrease of $3x$ than $4x$ is ..... ( 1 , $x$ , $-1$ , $-x$ ) |
| 8 | The number of all rational numbers that exist between $\frac{2}{5}$ and $\frac{4}{5}$ is ..... ( 1 , 2 , 3 , infinite number ) |
| 9 | the degree of the absolute term is ..... ( 1 , 2 , 0 , 3 ) |
| 10 | the additive inverse of $x+2$ is ..... ( $x-2$ , $-x-2$ , $2-x$ , 2 ) |
| 11 | The multiplicative identity element in $\mathbb{Q}$ is ..... |
| 12 | if the mode for the values : 2 , 4 , $k-3$ is 4 , then $k =$ ..... |
| 13 | If $x + \frac{3}{x} = 4 + \frac{3}{4}$ , then $x$ = ..... |
| 14 | if $(x-y)(3x+2y) = 3x^2 + kxy - 2y^2$ , then $k$ = ..... |
| 15 | The order of the median for the values : 4 , 8 , 7 , 5 , 3 is ..... |
| 16 | $a(a+b) - b(a+b) = (a+b) \times$ ..... |

## *Answer the following questions*

| | |
|---|---|
| 1 | *if the ratio* $x : 25$ *equals* $2 : 5$ *, then* $x =$ ..... |
| 2 | *Add* : $2x - 6z + y$ , $3y + 2z - 5x$<br>.....<br>..... |
| 3 | *simplify* : $(a-4)^2 + 8(a-2)$<br>.....<br>..... |
| 4 | *Factorize by taking H.C.F* : $9a^5 + 12a^4 - 3a^3$<br>.....<br>..... |
| 5 | *Divide* : $x^2 + 6y + 5$ *by* $x + y$ *where* $(x + y \neq 0)$<br>..... |
| 6 | $\mathbb{Q}^+ \cap \mathbb{Q}^- =$ ..... |
| 7 | *Find the volume of opposite figure*<br>.....<br>.....<br>  |

# Exam ( 8 )

**Choose the correct answer**

| | |
|---|---|
| 1 | if $(x+y)^2 = 15$ , $x^2 + y^2 = 7$ , then $xy =$ ..... ( 8 , 22 , 6 , 4 ) |
| 2 | the number of integers lying between $\frac{3}{5}$ , $\frac{8}{7}$ is ..... ( 0 , 1 , 2 , infinite number ) |
| 3 | $3x(2x+5y) = 6x^2 +$ ..... ( $6x^2$ , $15x^2$ , $15y^2$ , $15xy$ ) |
| 4 | if $\frac{2}{3}$ lies at the middle of the way between x and $\frac{1}{2}$ , then $x =$ ..... ( $\frac{1}{3}$ , $\frac{3}{4}$ , $\frac{5}{6}$ , $\frac{7}{8}$ ) |
| 5 | the algebraic term : $2^3 x^4 y^2$ is of the ..... degree ( nineth , sixth , seventh , eighth ) |
| 6 | the arithmetic mean for the values : $3 , 5-x , 7+x$ is ..... ( 2 , 3 , 4 , 5 ) |
| 7 | if the mode of the values : $7 , 5 , 2x+3 , 5 , 7$ is 5 , then $x =$ ..... ( 2 , $-1$ , 1 , $-2$ ) |
| 8 | if $\frac{3}{7} x = 42$ , then $\frac{5}{7} x =$ ..... ( 70 , 45 , 30 , 10 ) |
| 9 | $3xy + 6x =$ ..... $(y+2)$ ( 3 , $2x$ , $3x$ , $3y$ ) |
| 10 | The additive inverse of the number $\lvert -\frac{2}{3} \rvert$ is ..... ( $\frac{2}{3}$ , $\frac{3}{2}$ , $\frac{-2}{3}$ , 0 ) |
| 11 | If $\frac{a}{b} = 60$ , then $\frac{a}{3b} =$ ..... |
| 12 | The multiplicative inverse of $\frac{-7}{5}$ is ..... |
| 13 | $7x(x+5y) = 7x^2 +$ ..... |
| 14 | The sum of five numbers is 30 , then the arithmetic mean of these numbers is ..... |
| 15 | $(\frac{2}{3}x^2y) \times (\frac{3}{2}xy^2) =$ ..... |
| 16 | $-\frac{4}{11} \times$ ..... $= 1$ |

## *Answer the following questions*

| | |
|---|---|
| 1 | *Divide* : $14x^3 - 28x^2 + 7x$ *by* $7x$ ( *where* $x \neq 0$ )<br>.....<br>..... |
| 2 | *Add* : $2a + 3b - c$ *and* $3a - 2b - 2c$<br>.....<br>..... |
| 3 | *find* $(6x - 3y)(6x + 3y)$<br>..... |
| 4 | *find the quotient of* : $x^2 - 9x + 20$ *by* $x - 4$ ( *where* $x \neq 4$ )<br>..... |
| 5 | *the length of arectangle is* $(2x + 5)$ *and its width is* $(3x + 2)$ .<br>*Calculate its area*<br>.....<br>..... |
| 6 | *if* $\{1, 4, 3x\} = \{4, 12, 1\}$, *then* $x =$ ..... |
| 7 | *find the mean and the median for the following numbers*<br>7 , 8 , 2 , 4 *and* 9<br>.....<br>..... |

# Exam ( 9 )

## Choose the correct answer

| | |
|---|---|
| 1 | which of the following algebraic term is like the algebraic term $2x^2y$ ? ( $2y^2x$ , $yx^2$ , $2x^2$ , $x^2y^2$ ) |
| 2 | $(4x^3y^2 - \ldots\ldots) \div 4xy = x^2y - 2$ where $xy \neq 0$ ( $8x^2y$ , $8x^2y^2$ , $-8x$ , $8xy$ ) |
| 3 | the algebraic term : $5^3$ is of the ..... degree ( first , second , zero , fourth ) |
| 4 | the rational number $\frac{a}{b}$ is positive if ..... ( $ab > 0$ , $ab < 0$ , $a + b = 0$ , $a > b$ ) |
| 5 | $3x \times k = 12x^3$ , then $k$ = ..... ( $2x^4$ , $6x^2$ , $4x^2$ , $4x$ ) |
| 6 | The increase of $6x$ than $-3x$ equals ..... ( $2x$ , $9x$ , $3x$ , $-9x$ ) |
| 7 | $(3x + 5)(x + 2) = 3x^2 + \ldots\ldots + 10$ ( $-7$ , $11x$ , $5x$ , $7x$ ) |
| 8 | if the order of the median of a set of values is fourth and fifth , then the number of these values is ..... ( 10 , 12 , 11 , 16 ) |
| 9 | if $x^2 = 1$ , $y^2 = 9$ , $xy = 3$ , then $(x - y)^2$ = ..... ( 1 , 2 , 3 , 4 ) |
| 10 | the coefficient of the algebraic term $-xy^2$ is ..... ( 1 , 2 , $-1$ , 3 ) |
| 11 | If the arithmetic mean of the values : 8 , $k$ , 7 , 5 is 6 , then $k$ = ..... |
| 12 | The additive identity element in $\mathbb{Q}$ is ..... , the multiplicative identity in $\mathbb{Q}$ is ..... |
| 13 | $\frac{-3}{5} + A = 0$ then $A$ = ..... |
| 14 | If the term $3x^2y^{m+1}$ from the $6^{th}$ degree , then $m$ = ..... |
| 15 | $-2a^2b \div 4ab$ = ..... ( $a \neq b \neq 0$ ) |
| 16 | the multiplicative inverse of the number $3\frac{2}{5}$ is ..... |

## *Answer the following questions*

**1** *The most repeated value of a set of values is called .....*

**2** *Divide :* $x^2 + 12x + 35$ *by* $x + 5$ $(\text{where } x \neq -5)$

.....

**3** *Factorize by identifying the H.C.F :* $3a(4a + 5b) - 2b(4a + 5b)$

.....

**4** *Add :* $3x - 5y + 2 , 2x + 5y - 2$

.....

.....

**5** *Simplify to the simplest form:* $(x - 4)(x + 4) + 9$ *, then calculate the numerical value of the result when* $x = 5$

.....

.....

.....

**6** *if the arithmetic mean of :* $x - 1 , x , x + 1$ *is 12 , find x*

.....

.....

.....

**7** *the following table shows the marks of a class in maths exam :*

| *marks* | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| *frequency* | 6 | 5 | 12 | 7 | 10 | 4 |

*find the mode mark*

# Exam ( 10 )

## Choose the correct answer

| | |
|---|---|
| 1 | if $\frac{7}{4x}$ is a rational number , then $x \neq$ ..... ( 4 , zero , $-4$ , $-7$ ) |
| 2 | if $x - y = 3$ , $x + y = 7$ , then $x^2 - y^2 =$ ..... ( 3 , 7 , 9 , 21 ) |
| 3 | the multiplicative inverse of $1\frac{2}{3}$ is ..... ( $\frac{2}{3}$ , $\frac{3}{2}$ , 1 , $\frac{3}{5}$ ) |
| 4 | the number of integers lying between $\frac{7}{3}$ , $\frac{11}{6}$ is ..... ( zero , 1 , 2 , infinite number ) |
| 5 | The sum of the square two monomials a , b is ..... ( $a^2 + b^2$ , $(a+b)^2$ , $2(a+b)$ , $2ab$ ) |
| 6 | $\frac{7}{5} >$ ..... ( $\frac{14}{5}$ , $\frac{14}{10}$ , $\frac{5}{7}$ , $\frac{21}{15}$ ) |
| 7 | if $\frac{2}{5}x = 10$ , then $\frac{4}{5}x =$ ..... ( 25 , 15 , 20 , 5 ) |
| 8 | the reminder of subtracting $-3a$ from $2a$ is ..... ( $5a$ , $-5a$ , $a$ , $-a$ ) |
| 9 | $25x^3 + 15x^2 + 35x =$ ..... $(5x^2 + 3x + 7)$ ( $5x^3$ , $5x^2$ , $5x$ , 5 ) |
| 10 | if the mode of the values : 5 , 7 , $x + 4$ , 5 , 9 is 7 , then $x =$ ..... ( 4 , 5 , 3 , 2 ) |
| 11 | the order of the median for the values : 4 , 12 , 9 , 8 , 2 is ..... |
| 12 | The highest common factor of the expression : $21x^2 + 14x^3 - 7$ is ..... |
| 13 | $12x^3y - 15xy^3 = 3xy\,(4x^2 -$ ..... $)$ |
| 14 | $\frac{3x}{5} + \frac{2x}{5} =$ ..... |
| 15 | $(y-1)\,(y^2 + y + 1) =$ ..... |
| 16 | The number $y + 5$ hasn't a multiplicative inverse , then $y =$ ..... |

## *Answer the following questions*

**1** *Simplify to the simplest form:* $\frac{6x^4y^2}{7} \times \frac{28xy^3}{3}$

.....

**2** *find the quotient of :* $x^2 - 2x - 8$ *by* $x - 4$ *(where* $x \neq 4$*)*

.....

**3**

**4** *subtract :* $4x^2 - 5x + 3$ *from* $5x^2 + 4x - 3$

.....

.....

**5** *Divide* $21x^2y - 7xy + 35xy^3$ *by* $7xy$ *(where* $xy \neq 0$*)*

.....

.....

.....

**6** $\mathbb{Q} = \mathbb{Q}^+ \cup \ldots\ldots \cup \mathbb{Q}^-$

**7** *the following table shows Ali 's marks in 6 mathematics exams*

| *Month* | *Oct.* | *Nov.* | *Dec.* | *Feb.* | *Mar.* | *Apr.* |
|---|---|---|---|---|---|---|
| *Mark* | 41 | 35 | 47 | 37 | 44 | 48 |

*Find each of the median an the mean*

# Exam ( 11 )

## Choose the correct answer

| | |
|---|---|
| 1 | The number $0.\dot{5}\dot{7}$ as a rational number ..... ( $\frac{5}{9}$ , $\frac{19}{33}$ , $\frac{3}{7}$ , $\frac{2}{3}$ ) |
| 2 | the square of the sum of the two monomial $a, b$ is ..... ( $a^2+b^2$ , $(a+b)^2$ , $2(a+b)$ , $2ab$ ) |
| 3 | The smallest prime number is ..... ( 0 , 1 , 2 , 3 ) |
| 4 | $\frac{x^2+2xy}{x}$ = ..... where $x \neq 0$ ( $x+2y$ , $x^3+2x^2y$ , $x^2+2xy$ , 2 ) |
| 5 | if $\frac{a}{b}=\frac{1}{2}$ , then $2a-b$ = ..... ( 1 , 0 , 3 , $-1$ ) |
| 6 | $7x$ exceeds $-5x$ by ..... ( $12x$ , $2x$ , $-2x$ , $-2x^2$ ) |
| 7 | if the arithmetic mean for the numbers : 3 , 5 , $x$ is 4 , then $x$ = ..... ( 3 , 4 , 5 , 6 ) |
| 8 | the median for the values : 4 , 8 , 3 , 5 , 7 is ..... ( 3 , 4 , 5 , 7 ) |
| 9 | The highest common factor of the expression : $5x^2-5x$ is ..... |
| 10 | $\frac{x-9}{x-2}=0$ , then $x$ = ..... ( 9 , 2 , $-9$ , $-2$ ) |
| 11 | The additive inverse of $(-2)^3$ is ..... ( 8 , $-8$ , 4 , 6 ) |
| 12 | If $\frac{a}{b}=0$ , then $3ab$ = ..... ( such that $b \neq 0$ ) ( 3 , $3ab$ , 0 , 1 ) |
| 13 | twice the number $2^{10}$ = ..... ( $2^{11}$ , $2^9$ , $4^{10}$ , $2^{20}$ ) |
| 14 | The additive inverse of $\left(\frac{-2}{3}\right)^2$ is ..... |
| 15 | the coefficient of the algebraic term $\frac{x^2 y}{3}$ is ..... |
| 16 | If $(x-7)(x+7)=x^2-K$ , then $K$ = ..... |

## *Answer the following questions*

| | |
|---|---|
| 1 | *if the median of the values* : $x+5$ , $x+3$ , $x+8$ *is* 9 , *find the value of* $x$ <br> ..... <br> ..... |
| 2 | *Add* : $3x-2y+7$ *and* $-2x+2y-9$ <br> ..... <br> ..... |
| 3 | *Use the distribution property to find* : $\frac{7}{12}\times\frac{23}{45}+\frac{17}{12}\times\frac{23}{45}-2\times\frac{23}{45}$ <br> ..... <br> ..... |
| 4 | *If* $a=\frac{7}{4}$ , $b=-\frac{1}{2}$ , *find the value of the expression* $(a-b)\div(a+b)$ <br> ..... <br> ..... |
| 5 | *Simplify to the simplest form*: $(x+2)^2-(x+2)(x-2)$ <br> ..... <br> ..... |
| 6 | *Divide* : $x^2+6x+5$ *by* $x+5$ ( *where* $x\neq-5$ ) <br> ..... |
| 7 | *the arithmetic mean of five values of sum* 45 *is* ..... |

## 1 Complete each of the following:

1) If $\frac{3}{7} \times (x) = \frac{3}{7}$ then x = ..... .
2) The algebraic term $2x^3y$ is of ..... degree.
3) The mode of the values 5 , 3, 1, 3, 5, and 3 is ..... .
4) Zero ÷ (- 12) = ..... .
5) $\frac{1}{2}$ = ..... % .

## 2 Choose the correct answer from the given ones:

1) $(x - 1)(x^2 + x + 1)$ = .....

a) $x^3 + 1$ b) $x^3 - 1$ c) $x^3 + 3$ d) $x^2 + 2x$

2) 0. 57 = ..... %

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The arithmetic mean of the numbers 3, zero, 4, 6 and 7 is .....

a) 4 b) 5 c) 6 d) 7

4) The median of the values 2, 6, 8, 4, and 10 is .....

a) 4 b) 5 c) 6 d) 8

5) $\left|-\frac{7}{3}\right|$ ..... zero.

a) > b) = c) < d) ≤

## 3 (a) Find the sum of : $3x^2 + 2x + 5$ and $2x^2 - 4x - 3$

(b) Factorize by taking the H. C. F :5xy + 10xz

(c) Divide : $9x^3y^2 - 3xy$ by 3 x y where $x\,y \neq 0$

## 4 (a) Use the distribution property to find the value of:

$\frac{5}{11} \times 9 + \frac{5}{11} \times 4 - \frac{5}{11} \times 2$

(b) Find three rational numbers lying between: $\frac{1}{3}$ , $\frac{1}{5}$

(c) Divide: $x^2 - 5x + 6$ by (x -3)

## 5 The following table shows the marks of Mona in mathematics in 5 months:

| month. | Sept. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| Math. | 30 | 40 | 35 | 42 | 50 |

(1) Represent the previous data by broken line graph.
(2) Find the difference between the greatest and smallest mark obtained by Mona.

## 1 Choose the correct answer:

1) The value of $|-7| + |-1| =$ .....

a) –8 b) 6 c) 8 d) - 6

2) 0. 57 = .....

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The algebraic term $2ab^2$ is of ..... degree.

a) $1^{st}$ b) $2^{nd}$ c) $3^{rd}$ d) $4^{th}$

4) The median of the numbers: 2, 8, 5, 7, 6, is .....

a) 5 b) 7 c) 8 d) 6

5) $\frac{2}{x-7} \in Q$ if $x \neq$ .....

a) 7 b) 2 c) 0 d) -2

## 2 Complete each of the following:

1) The coefficient of $4a^3b^2$ is ..... .

2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is ..... .

3) The mode of the values 3 , 6, 3, 3, 6, 4, 3 is ..... .

4) The rational number lying at half way between $\frac{1}{3}$ and $\frac{3}{4}$ is ..... .

5) The arithmetic mean of the numbers: 2, 7, 6, 9, 16, 20 is ..... .

## 3 (a) Factorize the following by taking H. C. F. : $15x^3y^3 - 20x^2y^3 - 25xy$

(b) Find the quotient of : $\frac{16a^3b^2 - 24a^2b^2}{4a^2b}$ where $ab \neq 0$

## 4 (a) Using the properties of the rational numbers, find the value of:

$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$

(b) Find three rational numbers between: $\frac{1}{2}$ and $\frac{1}{3}$

(c) Simplify : (2 a - 3) (2 a + 3) + 7, then find the numerical value of the result when a = -1

## 5 (a) What is the increase of : $x^2 - 5x - 1$ than $3x^2 - 2x - 3$

(b) Divide: $x^2 - 8x + 12$ by (x -6)

(c) The following table shows the marks of Ali in 5 months:

| The month. | Sep. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| The mark. | 30 | 40 | 35 | 45 | 50 |

Represent these data by broken line.

## 1 Choose the correct answer:

1) The rational number which lies between $\frac{1}{3}$ and $\frac{2}{5}$ is = .....

a) $\frac{5}{15}$ b) $\frac{7}{15}$ c) $\frac{11}{30}$ d) $\frac{13}{30}$

2) $\frac{9}{x-2} \in Q$ if $x \neq$ .....

a) 9 b) 2 c) 0 d) -2

3) The median of the values: 3, 7, 2, 9, 5 and 11 is .....

a) 5 b) 6 c) 7 d) 12

4) If $x + \frac{3}{x} = 7 + \frac{3}{7}$ then x = .....

a) $\frac{1}{7}$ b) $\frac{4}{7}$ c) 1 d) 7

5) $|-\frac{3}{2}|$ ..... zero.

a) > b) < c) = d) ≤

## 2 Complete each of the following:

1) The coefficient of $5x^3y$ is ..... .

2) The mode of the numbers 5, 8, 9, 11, 5 is ..... .

3) The multiplicative inverse of the rational number $2\frac{1}{5}$ is ..... .

4) The Arithmetic mean of the values 14, 18, 17 and 15 is ..... .

5) $|-6| - |3|$ = ..... .

## 3 a) Use the distributive property to calculate:

$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$

(b) **Divide:** $(60x^6 - 48x^{10} - 12x^3)$ by $(-12x^3)$

## 4 a) Factorize by taking the H.C.F. $12x^2y - 6xy^2$

(b) **Reduce to the simplest form:** $(3x-2)^2 - (x+2)(x-2)$

(c) **Divide:** $3x^2 - x - 2$ by $(x - 1)$

## 5 a) Add: $3a - 2b + C$ and $2a + 3b - 5C$

(b) **from the following table:**

| Mark. | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| No. of pupils freq. | 3 | 5 | 7 | 9 | 4 | 2 |

1- Represent the data by bar charts.

2- Find the mode mark.

## 1 Choose the correct answer:

1) $\frac{5}{x+1}$ is The rational number if x ≠ ..... {O , 5 , 1 ,- 1}

2) $(3x+2)(x+7) = 3x^2 + \ldots\ldots + 14$ { 23 x ,19 x , 21 x, 2x}

3) The mode of the values: 4, 3, 8, 1, 8 , 3 and 3 is ..... { 1 , 8 , 3 , 4}

4) $(4a^2 + 2a) \div 2a = \ldots\ldots$ { 2a +1, 2a, 2a - 1, 1 }

5) the number $0.\dot{5}\dot{7}$ as a rational number in the simplest form is .....

{ $\frac{5}{9}$ , $\frac{19}{33}$ , $\frac{3}{7}$ , $\frac{2}{3}$ }

## 2 Complete:

1) The degree of the term $5x^2y$ is ..... and its coefficient is .....

2) The arithm. mean of the these numbers 2, 5, 8, 9, 14, 28 is ..... .

3) x (a + 1) -y (a+1) = (a + 1) ( ..... - .....) .

4) The median of these numbers 12, 13, 8, 2, 10 is .....

5) The multiplicative inverse of the rational number $1\frac{2}{3}$ is ..... .

## 3 a) Add: $5x^2 + y^2 - 3xy$ and $x^2 - 2xy + 3y^2$

(b) **Subtract:** 5a - 3b + 6c from 2b + a-5c

(c) **Factorize by identifying the H.C.F:** $15a^3b^2 + 6a^2b - 3ab$

## 4 a) If $x = \frac{1}{2}$ , y = -3 and $z = \frac{-3}{4}$

Find in the simplest form the numerical value of: $(x \div z) \times y$

(b) Using the property of distribution to get the result of

$\frac{2}{3} \times \frac{4}{7} + \frac{2}{3} \times \frac{5}{7} - \frac{2}{3}$

(c) **Divide:** $x^2 - 5x + 6$ by (3 - x)

## 5 a) Simplify: $(2x+1)^2 + (1-2x)(1+2x)$

(b) **This frequency table shows the weight of 30 primary school pupils:**

| KG. | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|
| Number of pupils | 5 | 8 | 5 | 3 | 5 | 6 | 4 | 4 |

a) Draw a bar chart for the frequency table data.

b) Identify and write the mode weight of the primary school pupils.

## 1 Question one : Choose the correct answer:

1) If $\frac{x}{y} = 1$ then $2x - 2y =$ ..... {4 , 2 , 1 , 0}

2) The degree of $-5\ x^2y^3z$ is ..... { 2 , 3 , 5 , 6}

3) The order of median of 7 values is ..... { 3 , 4 , 5 , 6}

4) $|-5| - |4| =$ …..… { -1, 1, -9, 9 }

5) The number between $\frac{2}{3}$ , $\frac{3}{5}$ is ..... $\{\frac{30}{45}, \frac{29}{45}, \frac{18}{30}, \frac{20}{30}\}$

## 2 Question two : Complete:

1) The most repeated value is .....

2) The number 1.25 in the form of $\frac{a}{b}$ is ..... .

3) Subtracting -5 xy from - 3xy = .....

4) $(x + 3)^2 = x^2 +$ ..... $+ 9$ .

5) The sum of 5 values if there mean is 5 is ..... .

## 3 Question three:

(a) Find the value of $(2x - 3)(2x + 3) + 9$

(b) Use an arrow to represent the number $\frac{7}{9}$ on the number line.

(c) Find the value of k that makes the expression:
$x^3 + x^2 + 2x + k$ is devisable by $(x - 3)$

## 4 Question four:

a) **Divide:** $9\ x^2\ y + 12xy^2 - 15x^2y^2$ by $-3\ xy$ where $x, y \neq 0$

(b) Find the value of $(-\frac{3}{7}) \times \frac{5}{6} - \frac{5}{6} \times (-\frac{3}{7})$

## 5 Question five :

(a) **Factorize the following by taking H. C. F.:** $15\ x^3y^3 - 20\ x^2\ y^3 - 25\ x^3y^2$

(b) Ashraf recorded the length of his bus journeys to school for 3 weeks. He wrote time to the nearest minute.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 17 | 16 | 17 | 15 | 13 | 22 | 16 | 14 | 25 | 17 | 16 | 18 | 16 | 18 |

a) Identify the median time.

b) Identify the mode time.

(c) Calculate the mean time.

**Answer the following questions:**

**1 Choose the correct answer from the given ones:**

1) The additive inverse of the number $(-2)^3$ = .....

(a) 8 b) -8 c) 4 d) 6

2) $(x^{-2})^3$ = ..... $x \neq 0$

(a) $x^{-5}$ b) x c) $x^{-6}$ d) $x^6$

3) The probability of the impossible event = .....

(a) 1 b) $\phi$ c) -1 d) zero

4) Half the number $2^{10}$ is ….....…

(a) $2^9$ b) $2^5$ c) $2^{11}$ d) $2^{20}$

5) 0.0000073 = .....

(a) $7.3 \times 10^6$ b) $7.3 \times 10^{-6}$ c) $7.3 \times 10^5$ d) $7.3 \times 10^{-5}$

**2 Complete the following:**

1) $\sqrt{16+9}$ = .....

2) 2, 7, 12 , 17 , ..... (in the same pattern)

3) $(\frac{-2}{3})^6 \div (\frac{2}{3})^4$ = .....

4) If 3 x = 12 then 2 x = .....

5) A fair die is rolled once, then the probability of getting an odd number equals .....

**3 Find each of the following:**

(a) $(\frac{2}{5})^2 \times \sqrt{\frac{25}{4}} \times (1\frac{3}{4})^0$

(b) Determine 3 ordered pairs satisfying the relation y = 2x + 1, then graph them.

(c) **Divide:** $6x^2 - 13x + 6$ by $(3x - 2)$.

**4** (a) **Find the solution set of each of the following in Q:**

1) 2 x - 1 = 7 2) 3 x + 4 ≥ 10

(b) Simplify: $\frac{(7)^3 \times (-7)^4}{(7)^5}$

**5** (a) If $x = \frac{2}{3}$ , $y = \frac{-3}{4}$ , z = 2

**Find** the numerical value of $x^2 y^2 + 2z$

b) A box contains 3 red balls, 5 yellow balls and 2 black balls. A ball is drawn randomly, find the probability that the drawn ball is.

(a) yellow ball. b) not black ball. c) red ball

## 1 Choose the correct answer:

1) $0.\dot{7}$ = .....

a) $\frac{7}{10}$ b) $\frac{7}{9}$ c) $\frac{7}{100}$ d) $\frac{7}{99}$

2) The multiplicative inverse of the number $\frac{1}{2}$ is .....

a) 1 b) -2 c) 2 d) 5

3) If $(x - 3)(x + 3) = x^2 - k$ then k = .....

a) 9 b) 6 c) -9 d) -6

4) The median of values 9 , 7 , 10 is .....

a) 7 b) 10 c) 9 d) 3

5) $|-3| + 3$ = .....

a) zero b) 6 c) -6 d) 33

## 2 Complete each of following:

1) $x^4 \times x^2$ = .....

2) The degree of the algebraic expression $5x^2 + 4$ = ..... .

3) $(2x + 5)^2 = 4x^2 +$ ..... + 25

4) The rational number which is between $\frac{4}{11}, \frac{6}{11}$ is .....

5) If a + b = 5 then 3a + 3b = ..... .

## 3 a) Add: $2x - 5y + 6z$ to $3x + 5y - 2z$

(b) **Divide:** $8b^3 + 12b^2 - 4b$ by 4 b

## 4 a) Using distributive property, find the value of $\frac{5}{13} \times 8 + \frac{5}{13} \times 5$

(b) Factorize by taking the H. C. F : $9x^2 - 27x$

(c) **Divide:** $x^3 + x^2 + 2x - 16$ by $(x - 2)$

## 5 a) Find three rational numbers lying between: $\frac{1}{3}, \frac{1}{2}$

(b) **The following table shows the frequency of marks of 33 students:**

| Marks | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| Frequency | 4 | 10 | 8 | 6 | 3 | 2 |

1) Represent it with column.

2) Find the mode.

## 1 Complete:

1) The degree of $7 x^3y$ is = .....

2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is .....

3) The mode of the values (17 , 10 , 12 , 17, 10 and x) is 10, then x = .....

4) $(2x + 3)$ ( ..... + 4) = $6x^2$ + ..... + 12

5) $\frac{-7}{x-3} \in Q$ , then $x \neq$ .....

## 2 Choose the correct answer:

1) The Arithm. mean of the values 11, 20, 22, 15, 22 is .....

(a) 18 b) 15 c) 22 d) 90

2) $|5 - 7| + 2$ = ……..…. .

(a) -2 b) 4 c) 0 d) 2

3) The number which lies at half way between $\frac{1}{2}$ and $\frac{7}{8}$ is .....

(a) $\frac{11}{16}$ b) $\frac{11}{8}$ c) $\frac{11}{4}$ d) $\frac{11}{32}$

4) The median of the numbers 6, 2, 8, 0, 3 and 5 is .....

(a) 3 b) 4 c) 6 d) 5

5) The increase of (2x -5) than (x - 2) = .....

(a) 3x - 7 b) x - 3 c) 3 - x d) $2x^2 + 10$

## 3 Use the distributive property to find:

(a) $\frac{7}{13} \times 11 + \frac{7}{13} \times 9 - \frac{7}{13} \times 7$

(b) Add $x^2 + 5xy - 5$ and $-4x^2 + 5xy + 2$
and find the value of the result when x = 2 and y = 1

(c) **Divide:** $x^3 + 2x^2 - 1$ by $(x + 1)$

## 4 Divide:

(a) $\frac{16x^3y - 12x^4 + 4x}{4x}$ where $x \neq 0$

(b) Find three rational numbers lying between: $\frac{1}{3}$ , $\frac{1}{2}$

## 5 Factorize by taking H.C.F :

(a) $4x^2 + 2x + 16x^4$

(b) Simplify (x - 5) (x + 5).

(c) The following table shows the marks of Heba in 5 months.

| The month. | Sep. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| The mark. | 30 | 40 | 35 | 45 | 50 |

Represent these data by broken line.

**1 Complete the following:**

(a) The mode of the values 23, 33, 23, 33, 23, 21 is .....

(b) $(x - 2y)^2$ = .....

(c) The multiplicative inverse of $(\frac{1}{3} - \frac{1}{2})$ is .....

(d) The degree of the expression $(2xy^2 - 5xy^3 + 4xy)$ is .....

(e) If the Arithm. mean of 10 values is 54.5, then the sum of these values = .....

**2 Choose the correct answer:**

(a) $|3 - 8| + 3$ = ……..…. . {-2 , 8 , -8 , 2}

(b) The number which lies at half the way between $\frac{1}{2}$ and $\frac{7}{8}$ is .. $\{\frac{11}{16}, \frac{11}{8}, \frac{11}{4}, \frac{11}{32}\}$

(c) $0.\dot{5}\dot{7}$ = ..... $\{\frac{57}{100}, \frac{75}{99}, \frac{575}{1000}, \frac{19}{33}\}$

(d) The median of the numbers 23 , 33 , 13 , 32 , 22 , 31 is ..... {22 , 23 , 27 , 32}

(e) If $(x - 7)(x + 7) = x^2 + a$, then a = ..... {14 , -14 , 49 , -49}

**3 (a) Use the properties of multiplication and addition to find the value of:**

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Find three rational number lies between $\frac{3}{4}$ and $\frac{2}{3}$

**4** (a) Subtract $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) Factorize by taking out the H.C.F $12x^5y^2 - 15x^3y^2 + 3yx^2$

(c) **Divide:** $x^2 + 10x + 24$ by $(x + 4)$

**5** (a) **Divide:** $(18x^3y - 12xy^2 + 6xy)$ by 6xy?

(b) The table shows scores for a class on a 10 points math test.

| Scores | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| Frequency | 4 | 10 | 8 | 6 | 3 | 2 |

Find

i) The number of students whose score less than 8 ?

ii) the median of the score ?

iii) the mode of the score?

**Answer the following questions:**

**1 Choose the correct answer:**

(a) If $\frac{7}{a-4}$ rational number then a ≠ …..… {7 or 4 or - 4 or zero}

(b) $|-5|+5=$ ..... {zero or 10 or 55 or 25}

(c) The mode of the numbers 6, 8, 8, 5, 6, 8 and 7 is ..... {5 or 6 or 7 or 8}

(d) If $\frac{x}{y}=1$, then $2x-2y=$ ..... {zero or 1 or 2 or -4}

(e) Write the number 0.18 in the form of $\frac{a}{b}=$ .....

{$\frac{18}{10}$ or $\frac{2}{11}$ or $\frac{18}{100}$ or $\frac{99}{18}$ }

**2 Complete:**

(a) $(\frac{-2}{3})^0+4=$ .....

(b) The additive inverse of the number $(\frac{-3}{5})$ is .....

(c) The median of the values 7 , 4 , 5, 2 and 9 is .....

(d) The degree of the algebraic term - 7 is .....

(e) If $\frac{2}{3}x=1$ then x = .....

**3** (a) Factorize by identifying the H.C.F $15a^3b^4+6a^5b^2-3a^2b^2$

(b) Find the rational number in half-way between the numbers $\frac{1}{3}$ and $\frac{4}{5}$.

(c) **Divide:** $(64x^3-32x^2+8x)$ by 8x

**4** (a) Add: -7 a -5 b + 9 c and 2 c - 4 a + 3 b

(b) Find the total area of the cube its volume 27 $cm^3$.

(c) if $A=\frac{3}{4}$ and $B=\frac{-5}{2}$ Then find the value of $\frac{A-B}{A+B}$

**5** (a) Find the mean of the values 2 , 5, 8 , 9, 14 and 28

(b) **Divide:** $x^4-16$ by $(x^2+4)$

(c) The table shows scores for a classroom a 10 point math test.

| Scores | 4 | 5 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| Frequency | 6 | 5 | 13 | 7 | 4 | 2 |

1) Represent these data by broken line graph.

2) what is the mode of the score.

## 1 Choose the correct answer:

1) The value of $|-7| + |-1| =$ ..... = (-8 , 6 , 8 , -6 )

2) $(35x^5 + 7x^2) \div 7x^2 =$ ..... $(5x^3 + x \ , \ 5x^3 + 1 \ , \ 5x^7 + 1 \ , \ 5x^3)$

3) The algebraic, term $2ab^2$ is of .... degree $(1^{st} \ , \ 2^{nd} \ , \ 3^{rd} \ , \ 4^{th})$

4) The median of the numbers: 2, 8, 5, 7, 6 is ..... (5 , 7 , 8 , 6)

5) The mean of the number: 2, 7, 6, 9, 16, 20 is ..... ( 6 , 10 , 9 , 11)

## 2 Complete:

1- $(x + 3)(x - 3) = x^2 -$.....

2- The multiplicative inverse of the number $\frac{-2}{3}$ is .....

3- $3a^2 \times -2a^3 =$ .....

4- The mode of the values 4, 8, 6, 4, 4, 8 is .....

5- The rational number in half way between $\frac{3}{5}$ , $\frac{4}{5}$ is .....

**3** (a) **Subtract:** $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) **Divide:** $14x^3 - 21x^2 + 7x$ by $7x$ where $x \neq 0$

(c) **Add:** $2x - 7y + z$ and $5z + 6y - 2x$

**4** (a) Use the destructive property to find:

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Simplify $(x + 3)(x + 5)$

(c) if $a + b = 3$ then $5a + 5b =$ .....

**5** (a) **Find:** $\frac{3}{5} \div \frac{9}{15}$

(b) **Divide:** $x^2 - x - 72$ by $(x - 9)$

(c) Represent these data by using broken line:

| The month | Sep | Oct | Nov | Dec | Jan |
|---|---|---|---|---|---|
| The mark | 30 | 40 | 35 | 45 | 50 |

**Answer the following questions:**

**1 Choose the correct answer in brackets:**

1) If $|x| = 9$, then x = ……

(a) -9 b) ±9 c) 3 d) 9

2) $(5)^{-1}$ = .....

(a) -5 b) $-\frac{1}{5}$ c) $\frac{1}{5}$ d) 5

3) The mean of the values 2, 5, 8, and 9 is .....

(a) 6 b) 18 c) 9 d) 11

4) The ordered pair ..... satisfies the relation: $y = x + 2$

(a) (1 , 3) b) (3, 2) c) (1, 2) d) (-2, 4)

5) The multiplicative inverse of the number ..... is itself

(a) -1 b) 0 c) 2 d) 3

**2 Complete each of the following:**

(a) $(x + 5)(x + .....) = x^2 + ..... + 15$

(b) The standard form of the number 290000 is .....

(c) (20 - 1) (20 + 1) = 400 - .....

(d) If $x < y$, $z <$ zero , then xz .....yz

(e) If the age of Ahmed now is x years, then his age after four years = ..... years

**3 Find the solution set of each of the following:**

(a) $x + 13 = 14$ , $x \in Q$

(b) $1 \leq x - 5$ , $x \in Q$

**4** (a) Simplify and find the value of: $\times \sqrt{\frac{81}{16}} \times (\frac{2}{3})^3 \times (\frac{5}{7})^0$

(b) Use the distribution property to find the value of: $\frac{7}{15} \times 4 + \frac{7}{15} \times 11$

(c) Find the value of k that makes the expression:

$6x^3 - 13x^2 - 13x + k$ is divisible by (3x - 5)

**5** (a) The following table shows the distribution of marks for 30 students in an Exam.

| Marks | 4 | 5 | 7 | 8 | 9 | 10 | Sum |
|---|---|---|---|---|---|---|---|
| Frequency | 6 | 7 | 3 | 7 | 4 | 3 | 30 |

Represent the data by a broken line.

(b) 6 cards numberd from 1 to 6. One card is selected randomly.

Write the sample space, then find the probability of each of the following events:

1) A = getting a prime number.

2) B = getting a number smaller than 3.

## Dakahlia 13 M.L.S

### 1 Complete:

(a) The multiplicative identity element in Q is = .....

(b) $|-2\frac{1}{2}| - |2\frac{1}{2}|$ = .....

(c) The degree of the algebraic term $5 x y^2$ is .....

(d) If $a + 2b = 5$, $c = 2$ then the value of $a + 2(b+c)$ = .....

(e) The mode for the numbers 6, 2, 5, 4, 6, 3 is = .....

### 2 Choose the correct answer:

(a) $3x^2 \times 4x^2$ = ……. $(7x , 7x^2, 12x^4 , 12x^2)$

(b) 0.57 = ..... $(\frac{57}{100} , \frac{75}{1000} , \frac{57}{999} , \frac{19}{33})$

(c) If $(x - 6)(x + 6) = x^2 + k$. Then k = ..... (36, -36, 12, -12)

(d) $\frac{5}{x-2} \in Q$ If $x \neq$ ..... (7, 2, 0, -2)

(e) The area of rectangle of length 3 xy and width 2 y is .....

(5 xy , 6 $x^2y$, 6$xy^2$ , 10 xy)

### 3 (a)Add: (5x + 2y - 1) and (2x - 5y - 3)

(b) Use the distribution property to find: $6 \times \frac{5}{17} + 10 \times \frac{5}{17} + \frac{5}{17}$

(c) Find the value of k that makes the expression:

$x^3 - 3x^2 - 25x + k$ is devisable by $(x^2 + 4x + 3)$

### 4 (a) Find the quotient of: $\frac{24a^3 + 9a^2 - 3a}{3a}$ , ( $a \neq 0$)

(b) Find two rational numbers between $\frac{1}{3}$ and $\frac{3}{4}$

### 5 (a) If $x = \frac{2}{3}$ , $y = \frac{-3}{4}$ , $z = 2$ find the numerical value of: $xy \div z$

(b) The following table shows the marks of Ahmed in mathematics in 5 months:

| Month. | Sep. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| Marks. | 30 | 40 | 35 | 45 | 50 |

Calculate Ahmed's mean marks in 5 months.

## 1 Complete:

(a) The degree of algebraic term ( $5 x^2 y$) is .....

(b) $\frac{2}{8} + \frac{-5}{8}$ = .....

(c) The mean of 2, 5, 8, 9, is .....

(d) $(x - 5)(x + 5)$ = .....

(e) If $|y| = 10$, then y = ..... or .....

## 2 Choose the correct answer:

(a) The median of the numbers 8, 17 , 4 , 6 and 10 is ..... (11, 10, 6, 8)

(b) $-15 ab^4 \div 5 ab^3$ = ..... Where $ab \neq 0$ (3b, -3b, -3ab, 3ab)

(c) The mode of the numbers 2, 5, 7, 6, 4 and 6 is ..... (5, 6, 7, 2)

(d) 0.5 in the form $\frac{a}{b}$ is = ..... $(\frac{4}{9}, \frac{5}{9}, \frac{7}{9}, \frac{8}{9})$

(e) The number that has no multiplicative inverse is ..... (1, -1, 0, 2)

## 3 (a) using distributive property to find the value of:

$\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \frac{-3}{7}$

(b) Add: $3y^2 + 2xy - 5$ to $-2x^2 - 3xy + 3$

(c) **Divide:** $3x^2 - 4y - 20$ by $(y + 2)$

## 4 (a) If $a = \frac{3}{4}$ , $b = \frac{-5}{2}$ Find in the simplest form the numerical value of: $\frac{a - b}{a + b}$

(b) Factorize by identifying the H.C.F: $12 a^2 b + 18 a^3 b^2$

## 5 (a) Simplify : $(x - z)^2 - 4$

(b) The following table shows the marks of Ali in 5 months:

| The month. | Sep. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| The marks. | 30 | 40 | 35 | 45 | 50 |

Represent these data by broken line.

## 1 Choose the correct answer:

1) $x^3 \times x^2 =$ ……

a) $x^6$ b) x c) $x^3$ d) $x^5$

2) If $\frac{x}{y} = \frac{2}{3}$ then $\frac{3x}{2y}$ = .....

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) 1 d) $\frac{3}{2}$

3) Express $\frac{5}{11}$ as a decimal

a) 0.45 b) 0.454 c) 0.45 d) 0.045

4) The Algebraic term $2x^3$ has ..... factors

a) 2 b) 3 c) 4 d) 5

5) The mean of these numbers 7, 4, 9, 2, 8 is .....

a) 5 b) 4 c) 8 d) 6

## 2 Complete:

(a) The mode of these numbers 4, 5, 3, 4, 6, 5, 4 is .....

(b) $18\ a^2 \div 3\ a$ = .....

(c) $\frac{3}{5} \times \frac{2}{7}$ = .....

(d) The median of these numbers 28, 31, 34, 36, 41 is .....

(e) $\frac{3}{7} \times$ ..... = 1

## 3 (a) Simplify: $(4x + 1)(2x + 3)$

(b) Factorize by identifying the H.C.F $4m^2(2x + y) - 3m(2x + y) - 7(2x + y)$

## 4 (a) Identify and write five rational numbers between $\frac{3}{5}$ , $\frac{4}{5}$

(b) Find the sum of $(3x - 2y + 5)$ and $(x + 2y - 2)$

(c) **Divide:** $5x - x^2 + 6$ by $(x - 6)$

## 5 (a) If water flows through a pipe at the rate of $2\frac{1}{2}$ litres per minute, how many minutes will it take to fill three 20- litre containers?

(b) The frequency table shows the weights of 40 pupils.

| Weights (kg) | 30 | 35 | 40 | 45 |
|---|---|---|---|---|
| Number of pupils | 8 | 9 | 13 | 10 |

Draw a bar chart for the frequency table data.

**Answer the following questions:**

**1 Choose the correct answer:**

1) If : $(x + 5)(x - 5) = x^2 + k$, then k = ……

a) 5 b) -5 c) 10 d) -25

2) The mode of 4 , 5 , 10 , 4 and 7 is .....

a) 5 b) 10 c) 4 d) 7

3) If: $\frac{x}{y} = \frac{2}{3}$ , then $\frac{3x}{2y}$ = .....

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) $\frac{3}{2}$ d) 1

4) The rational number that lies at half way between: $\frac{1}{3}$ and $\frac{5}{6}$ is .....

a) $\frac{2}{3}$ b) $\frac{7}{12}$ c) $\frac{1}{2}$ d) $\frac{2}{7}$

5) $(4x - 3)(x - 4)$ = .....

a) $4x^2 - 19x - 12$ b) $4x^2 - 7$ c) $4x^2 - 12$ d) $4x^2 - 19x + 12$

**2 Complete each of the following:**

1) The number which it's additive inverse is itself is .....

2) If: $\frac{3}{5} \times x = 1$, then x = .....

3) The degree of $4x^3y^4$ is .....

4) The additive inverse of $\frac{1}{|-5|}$ is .....

5) If the mean of : x - 3, x, x + 3 is 6, then the value of x is .....

**3 (a) Simplify:** $(2a - 3b)^2 - 3(2a - b)(2a + b)$, then find the numerical value of the result if a = -1 and b = -2

(b) Use the distributive property to find the value of: $\frac{3}{13} \times 4 - \frac{3}{13} \times 3 - \frac{3}{13}$

(c) **Divide:** $8x^2 - 7x - 18$ by (x - 2)

**4** (a) Factorize : $12x^3 - 6x^2 + 3x$

(b) Multiply : $(2x + 5) \times (2x - 5)$

(c) **Divide:** $27x^2y^4 - 15x^3y^3 + 9x^2y^2$ by $3x^2y^2$ where $xy \neq 0$

**5** (a) If : $a = \frac{-1}{3}$, $b = \frac{3}{2}$ , c = 2 find: a + b - c.

(b) The table shows the scores of one class in math quiz of maximum 10 scores:

| Marks | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| Frequency | 2 | 7 | 6 | 4 | 4 | 3 |

Represent the data using bar line graph.



**Answer the following questions:**

**1 Choose the correct answer:**

1) $\frac{3}{4}$ = ..... %

a) 25 b) 50 c) 75 d) 100

2) $(-8\ y^{5}) \times (-7\ y^{4})$ = .....

a) -15 y b) $56y^{9}$ c) $-56y^{9}$ d) 56y

3) The median of the numbers 3, 8, 6, 6, 10, 2 is .....

a) 6 b) 7 c) 8 d) 10

4) If: $\frac{5}{x-3} \in Q$ then x ≠ .....

a) 5 b) 7 c) 2 d) 3

5) $(x^2 + x) \div x$ = ..... where x ≠ 0

a) 0 b) x c) 2x +1 d) x +1

**2 Complete the following:**

a) The additive inverse of zero is .....

2) the mode of the values 3, 6, 19, 10, 13, 6, 19, 21, 6 is .....

3) $(x + 2)(x + 3) = x^2 +$ ..... + 6

4) $|-5| - |-2|$ = .....

5) The mean of 2, 5, 8, 9 is .....

**3 (a)** Find three rational numbers lying between $\frac{1}{3}$ and $\frac{3}{2}$**:**

(b) **Subtract:** 3x - 5y + 2z from y - 4z + 3x

(c) **Divide:** Find the value of k that makes the expression:

$x^3 + x^2 + 2x + k$ is divisible by (x - 1)

**4 (a) factorize by taking out H.C.F:** $10 \times y^2 - 5\ x^2\ y$

(b) Use the distributive property to find: $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

**5** (a) find the quotient of dividing: $6x^3 - 12x^2 + 24\ x$ by 6 x where x ≠ 0.

(b) The following table shows the marks of Mohammed in math in 5 months:

| Month. | Sep. | Oct. | Nov. | Dec. | Jan. |
|---|---|---|---|---|---|
| Marks. | 45 | 35 | 45 | 40 | 50 |

Represent the previous data by broken line graph.



**Answer the following questions:**

**1 Complete each of the following:**

1) $\frac{3}{7} \times$ ..... = 1

2) $(x + 5)(x +$ .....$) = x^2 +$ ..... $+ 15$

3) The mean of these numbers 2, 5, 8 and 9 is .....

4) $\frac{2}{5} <$ ..... $< \frac{3}{5}$

5) The algebraic expression $4x^3 - xy + 5$ is of the ..... degree.

**2 Choose the correct answer:**

a) By using calculator $0.\dot{5}\dot{8}\dot{1} = \frac{.....}{.....}$ $(\frac{32}{55}, \frac{581}{1000}, \frac{581}{100}, 5\frac{81}{100})$

b) The algebraic term $2x^3$ has ..... factors. (2, 3, 4, 5)

c) The mode of the numbers 3, 6, 10, 13, 19, 21, 19 is ..... (21, 19, 13, 10)

d) If $x = \frac{4}{3}$ then (x-2) (x+2) equal ..... $(\frac{4}{9}, \frac{12}{9}, \frac{10}{9}, \frac{-20}{9})$

e) The cube of the sum of A and B is ..... $(A^3 + B^3, (A + B)^3, A^3 B^3, 3A + 3B)$

**3 (a) Without using calculator find the value of:**

$\frac{4}{9} \times 11 + \frac{4}{9} \times 16$

(b) What is the increase of $x^2 - 5x - 1$ than $3x^2 + 2x - 3$

**4 (a)** Find the rational number in half way between $\frac{3}{8}$ and $\frac{4}{9}$

(b) Simplify: $2x(x + 5) + x(6-x)$ then calculate the numerical value when $x = 2$)

(c) **Divide:** $4x^2 - 10x + 12$ by $(2x - 4)$

**5 (a) Find the quotient of:** $\frac{60x^6 - 48x^{10} - 12x^3}{12x^3}$

(b) Scores in a frequency distribution are arranged in order.

| score | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|
| frequency | 2 | 7 | 6 | 4 | 4 | 3 | 2 | 1 |

1- Find the median of the scores.

2- Find the mode of the scores.

## 1 Choose the correct answer:

1) $(x^2 + x) \div x$ = ..... $(0, x, 2x + 1, x + 1)$

2) The mean of these numbers 2, 5, 8, 9 is ..... (6, 8, 9, 11)

3) $3a^4 b \times 5a^2 b^2 \times {}^2a^3$ = ..... $(60a^{11} b^3 , 30a^2 b^2 , 30a^9 b^3)$

4) The rational number 0.57 in simplest form is .....

$(\frac{57}{100} , \frac{75}{99} , \frac{575}{1000} , \frac{19}{33})$

5) If $a \times \frac{b}{2} = \frac{a}{2}$ , then b = ..... $(\frac{a}{2} , 0 , a, 1)$

## 2 Complete:

1) $(x + 5)(x + .....) = x^2 + ..... + 15$

2) $0 \div (-14)$ = .....

3) If $|x| = 7$ x = ..... or .....

4) The mode of these numbers 3, 6, 10, 19, 19, 21 is .....

5) The multiplicative inverse of $\frac{2}{3}$ is .....

## 3 (a) Write the product: $(x + 4)(3x + 2)$

(b) If $x = \frac{3}{2}$ , $y = \frac{1}{4}$ , $z = -2$ then find the numerical value of $x - y \div z$

(c) **Divide:** $10x^2 - 70x + 120$ by $(5x - 15)$

## 4 (a) Find the quotient: $\frac{16a^3 b^2 - 24a^2 b^2}{4a^2}$

(b) Simplify: $3x - 5y - x + 2y$.

## 5 (a) Find the sum: $(3x - 2y + 5)$ and $(x + 2y - 2)$

(b) **Subtract:** $2x + 6y - 7$ from $3x - 5y + 2$

**Answer the following questions:**

**1 Choose the correct answer:**

1) The mode of 4, 5, 10, 4 and 7 is .....

a) 5 b) 10 c) 4 d) 7

2) The degree of the Algebraic term $2 \times y$ is ..... degree

a) first b) second c) third d) fourth

3) The value of $|-7| + |1| =$ .....

a) -8 b) 8 c) 6 d) -6

4) If $x = 2$ then $3x =$ .....

a) 6 b) 4 c) 5 d) 9

5) If $|k| = 7$ , then k .....

a) 7 b) $\pm 7$ c) -7 d) otherwise

**2 Complete each of the following:**

a) The multiplicative inverse of $\frac{1}{3}$ is .....

2) The mean of the values 3, 4, 5 and 6 is .....

3) $(2 \times - 3)(3 \times + 5) = 6x^2 +$ ..... $-15$

4) The coefficient of $-3 \times y^2$ is .....

5) $\frac{1}{x - 3} \in Q$ , then $x \neq$

**3 (a) Divide:** $(64 \times^5 - 48 \times^3 + 8 \times^2)$ by $8 \times^2$ where $\times \neq 0$

(b) use the distributive $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(c) **Divide:** $x^3 - 25x$ by $(x + 5)$

**4 (a)** find three rational numbers between $\frac{3}{2}$ and $\frac{1}{3}$

(b) Subtract: $x + x^2 - 5$ from $2x^2 + x - 5$ then the value of result when $x = s$

**5** (a) The following table shows the weights of 25 pupils of first prep

| Weight in kg | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
|---|---|---|---|---|---|---|---|
| No. of pupils | 1 | 3 | 4 | 8 | 4 | 3 | 2 |

Represent this data using the bar line graph, then find the mode.

Alya youssry Hl.S

Alexandria governorate

East Educational Zone

Helalia Language School

Algebra middle (1)

Time Allowed ( 2 hours )

*Midyear Exam 2019-2020*

## 1-Complete the following

1) The number $\frac{4-x}{x-3} = 0$ if x = ____

2) The additive inverse of the number $\left(-\frac{2}{7}\right)^{zero}$ is ____

3) If the mode of the values 12 , 7 , x+1 ,7 ,12 is 7, then x= ____

4) The coefficient of the algebraic term $\frac{1}{2}x^3yz^2$ is ____

5) $(2x+3)^2$ = _____

## 2-Choose the correct answer from the given ones

1- $(a^2 - a) \div a =$ _____ $(a \neq 0)$

a. $a^2$ b. $a$ c. $a^2 + 1$ d. $a - 1$

2- $(4x - 3)(x - 4) =$ _____

a. $x^2 - 19x - 12$ b. $4x^2 - 7$

d. $4x^2 - 19x + 12$ c. $4x^2 - 12$

3- Express $\frac{5}{11}$ as a decimal ____

a. 0.45 b. $0.\dot{4}5\dot{4}$ c. $0.\dot{4}\dot{5}$ d. $0.0\dot{4}\dot{5}$

4- The result of subtracting $2a^2$ from $-2a^2$ is _____

a. zero b. $a^2$ c. $4a^2$ d. $-4a^2$

5- The median of the values : 4 , 8 , 3 is _____

a. 3 b. 4 c. 5 d. 8

6- $\left|\frac{-5}{3}\right|$ _____ zero.

a. < b. > c. = d. ≤

3- a) **Using the distribution property, find the value of the following in the simplest form** $\frac{4}{5} \times 13 - \frac{4}{5} \times 22 + \frac{4}{5} \times 9$

**b) Subtract** $2a - 3b - 3$ from $5a - 5b + 1$

4- **a)** **Divide:** $x^2 + 6x + 5$ by $x + 5$ $(where\ x \neq -5)$

**b)** **Simplify:** $(3x + 2y)(3x - 2y) + 4y^2$

**c) Find the mean and the median of the values:** 31 , 25 , 32 , 24 and 13

**5-**

a) **Write three rational numbers lying between:** $\frac{4}{5}$ *and* $\frac{2}{3}$

b) Factorize using H C F $18X^2y^3 + 6X^3Y^2 - 3X^2y^2$

c) $If\ a^2 + b^2 = 34\ ,and\ ab = 15\ ,then$
$find\ the\ value\ of\ (a - b)^2$

El-Gharbia Governorate.
East-Tanta Educational Directorate.
Al-Salam Language School.

Subject: Algebra & Statistics
Time : Two Hours

**First Term Exam 2020**
**For First Preparatory grade**

The Exam In Two Papers

1

**Answer the Following questions :**

**(1) Choose the correct answer :**

1) The degree of the algebraic term $3x^4 y$ is .....

(a) second (b) third (c) fourth (d) fifth

2) The mode of the values : 2 , 3 , 12 , 22 , 3 , 24 is .....

(a) 2 (b) 3 (c) 4 (d) 5

3) If $\frac{x}{y} = 1$ , then $5x - 5y$ = .....

(a) 5 (b) 1 (c) zero (d) $4x$

4) The number $\frac{x-5}{x+7}$ is a rational number if $x \neq$ .....

(a) 5 (b) $-5$ (c) 7 (d) $-7$

5) The additive inverse of the number $(-\frac{1}{3})^0$ is .....

(a) 3 (b) $-3$ (c) $-1$ (d) $\frac{1}{3}$

6) The number which lies between $\frac{7}{11}$ and $\frac{7}{20}$ is .....

(a) $\frac{7}{10}$ (b) $\frac{-7}{11}$ (c) $\frac{7}{15}$ (d) $\frac{7}{22}$

**(2) Complete the following :**

1) If $\frac{x-9}{x-7} = 0$ , Then X = .....

2) If $\frac{a}{b} = \frac{4}{7}$ , Then $7a - 4b$ = .....

3) $0.74 - 4\ \%$ = .....

4) The rational number which hasn't a multiplicative inverse is .....

5) The median of the numbers : 4 , 7 , 2 , 9 , 5 , 16 is .....



( يتبع الأسئلة في الورقة الثانية )

(3) a) Use the properties to find the result of :

$$\frac{8}{11} \times 5 + \frac{8}{11} \times 7 - \frac{8}{11}$$

b) Find the quotient of : $20a^3b^2 + 15a^2b^3 + 5ab$ by $5ab$
( where $ab \neq 0$ )

(4) a) add : $2x - 7y + Z$ , $5z - 2x + 8y$

b) Simplify the following expression to its simplest from :

$$(x-2)^2 - (x+3)(x-3) + 5(2x+1)$$

(5) a) Factorize by identifying the H.C.F :

$$12\,x^3\,y^4 + 8x^2\,y^4 - 20\,x^4\,y^4$$

b) Find the perimeter of $\Delta\, ABC$ if the arithmetic mean of its side lengths equals 9 cm

| Educational Directorate<br>Shiben elkom<br>Supervisor of:Math | 1st term exam<br>Algebra | 1st prep. school<br>Time : 2hours | 2019.<br>2020 |
|---|---|---|---|

For the questions (Choose) only the first answer will be taken into account.

اختبر والاجابة - الصف الأول الاعدادي - لغات

## Question (1) Choose the correct answer:

a) The additive identity in the set of integer numbers is...

{zero ,1 ,-1 ,2}

b) If the mean of 4, 5, X is 6then X=...

{4 ,5 ,6 ,9}

C) The number: $\frac{zero}{-2}$ .....N

{∉ ,∈ , ⊂ , ⊄}

d) The additive invers for the excepration 2X-3Y is...

{-2x-3y , 2x+3y ,3y-2x ,-3y+2x}

e)the smallest prim number is {zero ,1 ,2 ,3}

f) If $\frac{x+4}{x-3}$ is rational number then X≠.....

{3 , -3 , 4 , -4}

## Question (2) Complete each of the following:

a) The number that lies half the distances $\frac{1}{2}$ , $\frac{3}{4}$ is.....

b) The order of the median for values: 4, 12, 9, 8, 2 is.....

C) If the number: y+5 haven't multiplicative invers then Y=.....

d)the reminder of subtraction 2X-1 from.....= 2X

f) If the mode for values 2, 4, k-3, is 4 then k=.....

## question 3)

a) Factorize by H.C.F. $10X^3-5X^2$

b) Simplify $(a-4)^2 + 8(a-2)$

c) Add: $2X^2-5X+3$ , $4X-X^2-2$

## question 4)

a) Find three rational numbers between $\frac{3}{5}$ , $\frac{1}{4}$

b) Use the distributive to find: $\frac{-5}{2} \times 4 \oplus \frac{-5}{2} \times 3 \oplus \frac{5}{2}$

c) if $X = \frac{3}{2}$ , $Y = \frac{-5}{4}$ find in the simplest form the value of :

$X^2 - 2XY$ (show steps )

---

**Question 5)** a) divided: $(X^2 - 5X + 6)$ by $(X - 2)$ ; $x \neq 2$

c) Find the mean and the median of : 4 , 6 , 12 , 3 , 9 , 8

( show steps )

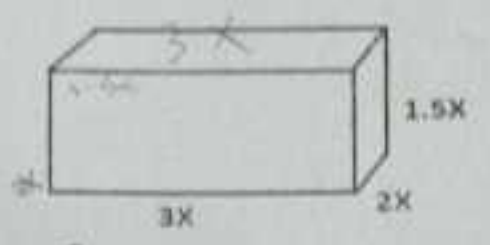
**Finished , With our best wishes**

Giza governorate
Haram Educational Zone
Technical office of supervision

Grade: Prep. One
Subject: Algebra
Time: 2 hours

**Mid-Year Exam (2019 – 2020)**

**1) *Choose the correct answer:***

a) The volume of the cuboid 

is .....

(1) 6.5X (2) $9X^3$ (3) $4.5X^3$

b) If $\frac{X-5}{X-7} = 0$, then X = .....

(1) 5 (2) 7.5 (3) -5

c) $(X^2 + X) \div X$ = .....

(1) 0 (2) 2X + 1 (3) X + 1

d) The median of the values 7, 4, 6, 5 is .....

(1) 6 (2) 7.5 (3) 4

e) If $\frac{X}{3} - 4 = 6$, then $\frac{X}{3} + \frac{2}{3}$ = .....

(1) $\frac{32}{3}$ (2) 10 (3) 1

f) The number $\frac{5}{3}$ > .....

(1) $\frac{10}{6}$ (2) $\frac{3}{5}$ (3) $\frac{10}{3}$

**2) *Complete:***

a) If $\frac{a}{b} = \frac{1}{2}$, then $2\frac{a}{b}$ = .....

b) The algebraic term $3^2XY^3$ whose degree is .....

c) If the mode of the values: 7, 5, X + 4, 7 is 7, then X = .....

d) The rational number which hasn't multiplicative inverse is .....

e) (50 + 1) (50 – 1) = 2500 – ..... = .....

3) A) *Use the distribution property to find the value of:*

$$\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \left(\frac{-3}{7}\right)$$

B) *Write the product:*

$$(2X - 5Y)(2X + 5Y)$$

---

4) A) *Subtract:*

$-a^2 - 5ab + 4b^2$ from $3a^2 - 2ab - 2b^2$

B) If the arithmetic mean of the numbers 3, 5, X is 4
Find the value of X

---

5) A) Factorize by identifying the H.C.F:

$15a^3b^4 + 6a^5b^3 - 3a^2b^2$

B) If $X = \frac{-1}{3}$, $Y = \frac{3}{4}$, $Z = 3$

Find the numeral value of: $XY \div Z$

| Cairo Governorate<br>El Nozha Educational Zone | **First Term Exam**<br>2019/2020 | Subject: Algebra and Statistics<br>Form: 1st Prepare<br>Time: 2 H |
|---|---|---|

**Question** (1) *Choose the correct answer :*

(1) The algebraic term $8x^2y^2$ whose degree ..... ( $2^{nd}$ , $3^{rd}$ , $4^{th}$ , $5^{th}$ )

(2) If the number $\frac{9}{x-6}$ is rational number then $x \neq \cdots$ ( 9 , -3 , 6 , 0 )

(3) The median of the values: 7, 3, 5, 4, 9 is ..... ( 3 , 4 , 5 , 7 )

(4) The number 2x is greater than -5x by ..... ( 7 , 7x , -3x , -5x )

(5) If the mode of : 7 , 5 , X + 3 , 4 and 7 is 7 then X = ..... ( 1 , 2 , 3 , 4 )

(6) If $(x-2)(x+2) = x^2 + k$ then k = ..... ( 8 , -8 , 4 , -4 )

---

**Question** (2) *Complete the following :*

(1) $9y^3 - 3y^3 =$ .....

(2) If $x = \frac{5}{9}$ , $y = \frac{3}{7}$ then $xy =$ .....

(3) The arithmetic mean of values 3 , 5 , 4 , 7 , 1 and 6 = .....

(4) $\frac{4}{5} = \cdots$ %

(5) $|-7| - |-9| =$ .....

---

**Question** (3)

[1] Use the distribution property to find the value of: $\frac{6}{8} + \frac{6}{8} \times 12 + \frac{6}{8} \times 3$

[2] Add: $2Y + 5X - 1$ , $2X - 7 - 5Y$

---

**Question** (4)

[1] Divide: $30B^2 + 45B^3 + 5B$ by 5 B where $B \neq 0$ then find the numerical value of the result when B= -1

[2] Find three rational numbers lying between: $\frac{1}{2}$ and $\frac{1}{3}$

---

**Question** (5)

[1] (a) Simplify to the simplest form: $(2X - 3)(2X + 3)$

(b) Factorize by taking the H.C.F : $5Y^3 + 15Y^2 - 10Y$

[2] The following table shows the distribution of marks in a test for 6 months :

| The month | Oct | Nov | Dec | Jun | Feb | March |
|---|---|---|---|---|---|---|
| No, of students | 7 | 8 | 10 | 9 | 5 | 3 |

Find the ~~mode~~ mean of these marks

Good Luck

محافظة القليوبية
مديرية التربية والتعليم
توجيه عام الرياضيات

# امتحان الصف الأول الإعدادي الفصل الدراسي الأول
## لعام ٢٠١٩-٢٠٢٠م

المادة: الجبر والإحصاء (مترجم)
الزمن: ســـــــاعتان

**Answer the following questions:**

## ①-Choose the correct answer from those given :

1) $ab \times 2a^2b =$..... ( $2a^3b^2$ ، $-2a^2b$ ، $ab^4$ ، $-3ab$ )

2) If the mode for the following set of values 7 , 5 , $y+3$ , 5 and 7 is 7 , then $y$ = .....
( 3 , 4 , 5 , 7 )

3) The rational number that lies in half way between $\frac{1}{3}$ and $\frac{5}{9}$ is .....
( $\frac{2}{3}$ , $\frac{3}{4}$ , $\frac{4}{9}$ , $\frac{5}{27}$ )

4) If the order of the median of $a$ set of values is the fourth , then the number of these values equals ..... ( 3 , 5 , 7 , 9 )

5) If $2x = 10$ , then $\frac{3}{5}x$ = ..... ( 25 , 15 , 5 , 3 )

6) The algebraic term $7xy$ is of ..... Degree ( first , second , third , fourth )

## ②-Complete each of the following :

1) $3xy + 6x$ = .....$(y + 2)$

2) $25\% - \left|\frac{-1}{5}\right|$ =.....

3) $\frac{-4}{11} \times$ ..... = 1

4) If the sum of 5 numbers is 30 , then the arithmetic mean for these numbers = ...

5) The number $\frac{4}{x}$ is a rational number if $x \neq$ .....

③- A) Subtract $2x + 6y - 7$ from $2x - 5y + 2$

B) Divide : $14x^3 - 28x^2 + 7x$ by $7x$ where $x \neq$zero

④- A) Use the distribution property to find the value of : $\frac{2}{7} \times 9 + \frac{2}{7} \times 6 - \frac{2}{7}$

B) The length of a rectangle is ( $2x + 5$ ) cm and its width is ( $3x + 2$ ) cm
Calculate its area.

⑤- A) Find the median for the values 3 , 5 , 12 , 11 , 8 , 10

B) If $x = \frac{-1}{3}$ , $y = \frac{3}{4}$ , $z = -3$ Find in simplest form the numerical value of each of the following :

1) $yz + \frac{1}{4}$ 2) $xy + yz$

( انتهت الأسئلة )

**Aswan Governorate** | **Subject : Maths (Algebra)**
**Aswan Educational Zone** | **Time : Two hours**
**School /**

## First term exam for 1st prep. 2019/2020

**Answer the following questions :**

**Q1 : Choose the correct answer :–**

1) $0.7 + 0.\dot{3} =$ ..... ( 1 , 3.7 , 0.37 , $1\frac{1}{30}$ )

2) If $\Delta + \square = 20$ , $\Delta + \Delta + \square = 35$ , then $\Delta =$ ..... ( 15 , 20 , 5 , 10 )

3) The mode for the values 1 , 3 , 7 , 3 , 6 , 7 and 3 is ..... ( 1 , 3 , 6 , 7 )

4) The algebraic term $6x^3y^2$ is of ..... degree . (third , fourth , fifth , sixth)

5) If $\frac{2}{5}x = 10$ , then $\frac{3}{5}x =$ ..... ( 25 , 15 , 20 , 5 )

6) The arithmetic mean of the set of values : 1 , 6 , 4 , 8 , 6 is ... ( 25 , 5 , 6 , 8 )

**Q2 : Complete The following :–**

1) $7x^3y^2 \times$ ..... $= 21x^3y^5$

2) The rational number half a way between $\frac{3}{5}$ , $\frac{4}{5}$ is .....

3) If the order of the median of a set of values is the fourteenth , then the number of these values equals ...

4) 1 , 1 , 2 , 3 , 5 , 8 , ..... (in the same pattern)

5) The multiplicative inverse of the rational number $-\frac{2}{3}$ is .....

**Q3 : a) Use the distribution property to find the value of :**

$$\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$$

**b) Divide :** $14x^2y - 35xy^2 + 7xy$ by $7xy$ where $x \neq 0$ and $y \neq 0$

**Q4 : a) Subtract :** $5x^2 + y^2 - 3xy + 1$ from $6x^2 - 2xy + 3y^2$

**b) Find three rational numbers that lie between $\frac{1}{2}$ and $\frac{1}{3}$**

**Q5 : a)** Simplify to the simplest form : $(2x - 3)(2x + 3) + 7$ , and calculate the numerical value of the result when $x = -1$

**b) The following table shows the marks of Gehad in one Maths test in 6 months :**

| The Month | October | November | December | February | March | April |
|---|---|---|---|---|---|---|
| The Mark | 41 | 35 | 47 | 37 | 44 | 48 |

**Find : (a)** The median for the previous marks .

**(b)** The mean for the previous marks .

Giza governorate (Omrania) Math. Inspection Subject : Algebra

Grade : Prep. 1 1st term exam. 2019-2020 Time : 2 hours

*Answer the following questions*

(1) Choose the correct answer :

(a) The mode of the values 6 , 8 , 6 , 1 , 1 , 9 , 8 , 2 , 8 is ....

( 1 , 6 , 8 , 9 )

(b) $x^3y \times xy^2 =$..... ( $x^3y^2$ , $3x^3y^4$ , $x^4y^3$ , $x^3y^3$ )

(c) the multiplicative invers of $\left|\frac{-7}{8}\right|$ is .....( $\frac{-7}{8}$ , $\frac{8}{7}$ , $\frac{-7}{8}$ , $\frac{-8}{7}$ )

(d) The degree of the expression ( $x^3 + 2xy + 3y^2x^2$ ) is the

.....degree ( 1st , 2nd , 3rd , 4th )

(e) $(-5x) + (-3x) - x =$..... ( $-9x$ , $9x$ , $8x$ , $-8x$ )

(f) $(3a + 2b)^2 = 9a^2 +$.....$+4b^2$ ( 6ab , 12ab , 24ab , 36ab )

(2) Complete the following :

(a) The arithmetic mean of the values 22 , 18, 15 , 25 and 30 is ...

(b) $-\frac{1}{4} +$ ..... $= 0$

(c) $(x + 4)(x - 4) = x^2$ .....

(d) The median of the values 23, 16, 12 , 28 , 21, 32, 9 is ...

(e) $7x(x + 5y) = 7x^2 +$ .....

(3) (a) By using the distribution property find :

$\frac{5}{9} \times \frac{2}{7} + \frac{5}{9} \times \frac{1}{7} + \frac{5}{9} \times \frac{4}{7}$

(b) Subtract $5x^2 + 2x - 1$ *from* $8x^2 - 3x + 7$

(4) (a) If $a = \frac{1}{2}$ , $b = -\frac{2}{3}$ , $c = 3$ , Find the value of

$c^2 - 6ab$

(b) Simplify to the simplest form $(5x - 6)^2 + 60x - 36$

(5) (a) Divide : $x^2 + 12x + 35$ by $x + 5$ ( where $x \neq -5$ )

(b) The following table shows the marks of 50 students

| Marks | 4 | 6 | 9 | 12 | 15 | 18 |
|---|---|---|---|---|---|---|
| Frequency | 6 | 13 | 16 | 7 | 5 | 3 |

Find the mode of these marks

| Dakahlia Governorate<br>Maths supervision | First Term exam<br>2019 - 2020<br>Jan. 2020 | Subject : Algebra<br>Time: 2 Hours<br>1st Prep |
|---|---|---|

**[Q1] Choose the correct answer from those given:**

(1) If $\frac{5}{x+2}$ is a rational number then X ≠.....
a) −2 b) zero c) 2 d) 5

(2) $(-3X) \times (-5Y)$ = .....
a) $-15xy$ b) $-8xy$ c) $8xy$ d) $15xy$

(3) The mode of the values: 4 , 5 , 4 , 3 , 7 , 5 , 4 is .....
a) 3 b) 4 c) 5 d) 7

(4) The algebraic term $6x^3y^2$ is of ..... degree
a) third b) fourth c) fifth d) sixth

(5) The arithmetic mean for the values 3 , 5 − X , 7+ X is .....
a) 2 b) 3 c) 4 d) 5

(6) If $\frac{2}{5}x = 10$ then $\frac{3}{5}x$ =.....
a) 25 b) 20 c) 15 d) 5

**[Q2] Complete each of the following:**

1) The multiplicative inverse of the number $(\frac{-9}{8})^{zero}$ is.....

2) The number that lies half way between $\frac{1}{2}$ and $\frac{5}{8}$ is.....

3) If △+□ = 20, △ + △+□ = 35 then □ =.....

4) If the order of the median of a set of values is the fifth, then the number of these Values is .....

5) 1 , 1, 2 , 3 , 5 , 8 , ..... ..... (in the same pattern)

**[Q3] [A] Simplify:** $(X-3)(X+3)+9$

Then calculate its numerical value when x = 5

**[B] If** $X = \frac{1}{2}$ , $Y = \frac{-2}{3}$ , Z = 2 , Find the value of $\frac{y-z}{x}$

**[Q4] [A] Use the distribution property to find the value of:**

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

**[B]** ① Add $5X+2y-1$ and $2X-5y+3$

② Factorize by identifying the H.C.F:

$$3a(a-2b)-6b(a-2b)$$

Then find the value of the result when $(a-2b) = |-\frac{1}{3}|$

**[Q5 ] [A] Divide** $2X^2+5Xy+2y^2$ by $2X+y$

Where $2x + y \neq 0$

**[B]** The following table shows Omar's marks in 6 mathematics examination:

| Month | Oct. | Nov. | Dec. | Feb | Mar. | Apr. |
|---|---|---|---|---|---|---|
| Mark | 41 | 35 | 47 | 37 | 44 | 48 |

Find each of the median mark and the mean mark.

*End of the questions*

35, 37, 41, 44, 47, 48

Directorate of Education
Administration of Distinguished & Governmental Language Schools

Subject : Algebra
Grade : 1st Prep
Time: 2 hours

# First Term Exam 2019/ 2020

Answer the following question ( The exam in two papers)

الورقة الاولى ((Allowed to use a calculator ))

## Q1 :Choose the correct answer :

1) The arithmetic mean of values : 3 , 5 , X , 8 , 5 is 6 then X = .....

a) 5 b) 6 c) 8 d) 9

2) The number of Integers lying between $\frac{7}{4}$ , $\frac{11}{8}$ is .....

a) Zero b) 1 c) 2 d) infinite number.

3) The necessary condition to make $\frac{X-5}{X-3}$ = Zero is .....

a) X = 5 b) X = 3 c) $X \neq 3$ d) X= - 5

4) $( a^2 + a ) \div a$ = ..... Where $a \neq 0$

a) a b) a + 1 c) $a^2$ d) $a^2 + 1$

5 ) If the median for the values: 11 , 18 , 7 , 10 , 21 is .....

a) 7 b) 10 c) 11 d) 21

6 ) The smallest fraction of the following is .....

a) $\frac{1}{2}$ b) $\frac{5}{11}$ c) $\frac{2}{3}$ d) $\frac{3}{7}$

## Q2: Complete each of the following :

1) $\frac{9}{20}$ = ..... %

2) If $( X + y ) ( 2 X + y ) = 2 X^2 + k X y + y^2$ , then k = .....

3) If the mode of the values: 15 , 9 , X + 1 , 9 , 15 is 9 , then X = .....

4) 1 , 4 , 9 , 16 , 25 , ..... , ..... ( In the same pattern)

5) The additive Inverse of $( \frac{-3}{5} )^{zero}$ = .....



بقية الأسئلة فى الورقة الثانية

**Q3** a) Use the distribution property to find the value of

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

b) Subtract : $7X + 5y + z$ from $6y + 2X + z$

**Q4** a) Simplify : $(2a - 3)(2a + 3) + 7$ , then find the numerical value of the result when $a = -1$

b) Find three rational numbers between: $\frac{2}{3}$ and $\frac{3}{4}$

**Q5** a) Divide: $X^2 - 6X + 8$ by $X - 2$ (where $X \neq 2$)

b) The following table shows the marks of Ghad in one Maths test In 6 months.

| The month | Oct. | Nov. | Dec. | Feb. | Match | April |
|---|---|---|---|---|---|---|
| The mark | 41 | 35 | 47 | 37 | 44 | 48 |

Find : the arithmetic mean for previous marks .

انتهت الاسئلة

**With my Best wishes**

| | | | |
|---|---|---|---|
| Educational Directorate shiben elkom Supervisor of :Math | 1st term exam Geometry | 1st prep. school Time : 2hours | 2019-2020 |

الهندسة والقياس–الصف الاول الاعدادي - لغات

## Question (1) Choose the correct answer:

a)If m (< A)=130° then m(< A) reflex =.....

{ 130° ,50° ,285° , 230°}

b)If triangle ABC≡triangleXYZ then $\overline{AC}$≡.....

{$\overline{AB}$ , $\overline{XY}$ , $\overline{YZ}$ ,$\overline{XZ}$}

c) Two adjacent angles are supplement then two outer side .....

{Perpendicular , congruent , skew, on the same straight line}

d) If the perimeter of square 24cm its area.....

{8cm² , 9cm² , 3cm² , 36cm²}

d) In the opposite figure number of rectangles=.....

{4 , 6 , 8 ,10}

L//M ,L//N then two straight line M and N are.....

{Perpendicular ,parallel ,intersection ,congruent}

## Question 2 complete:-

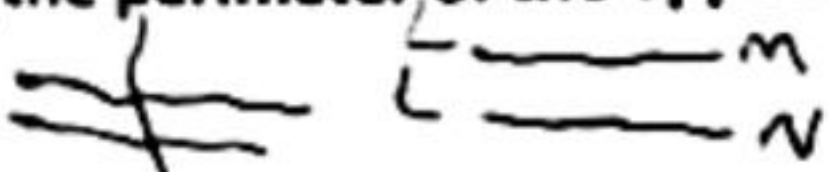
a)two triangles are congruent if two sides and ...included angle...congruent with corresponding from the other triangle

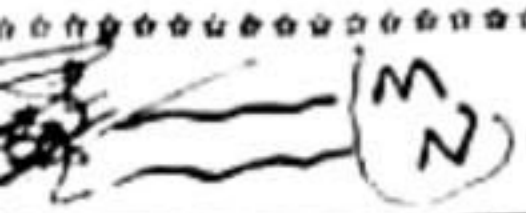
b)if a straight line cut two straight lines and two corresponding angles are equal in measure then two straight line are...parallel...

c)the measure of angle 50° complement angle ...40°.....

d) Two angles are congruent if..equal in measure

e)the perimeter of the opposite figure=..20..cm




**Question 3)** a ) use the geometric instilments to draw < ABC its measure $125^0$ then bisect it ( don't remove the arcs )


**b) *In the opposite figure:***

$AD \cap BE = \{c\}$ , $AC = CD$

$BC = CE$, $AB = 7cm$, $m(\angle B) = 80^0$

a) Is $\Delta ABC \equiv \Delta DEC$? Why?

b) Find the length $\overline{ED}$ , $m(\angle E)$

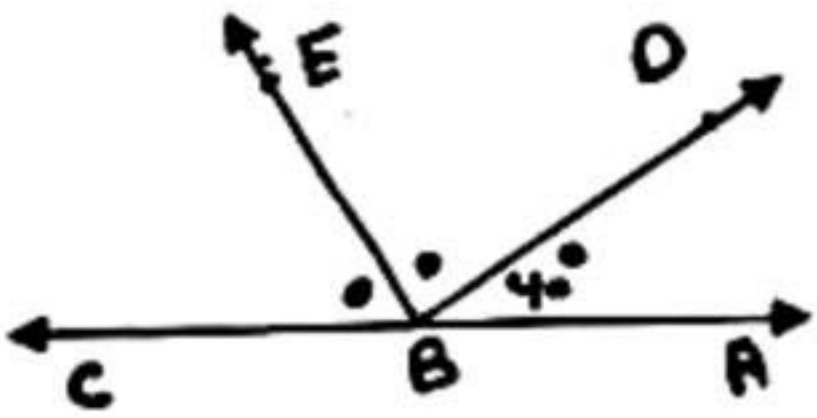


**Question 4)** a) *In the opposite figure:*

$\overleftrightarrow{BE} \perp \overleftrightarrow{AC}$

BE bisect $m(\angle DBC)$ , $m(\angle ABD) = 40^0$

Find: m (<DBC), m (<ABE)




**b) *In the opposite figure:***

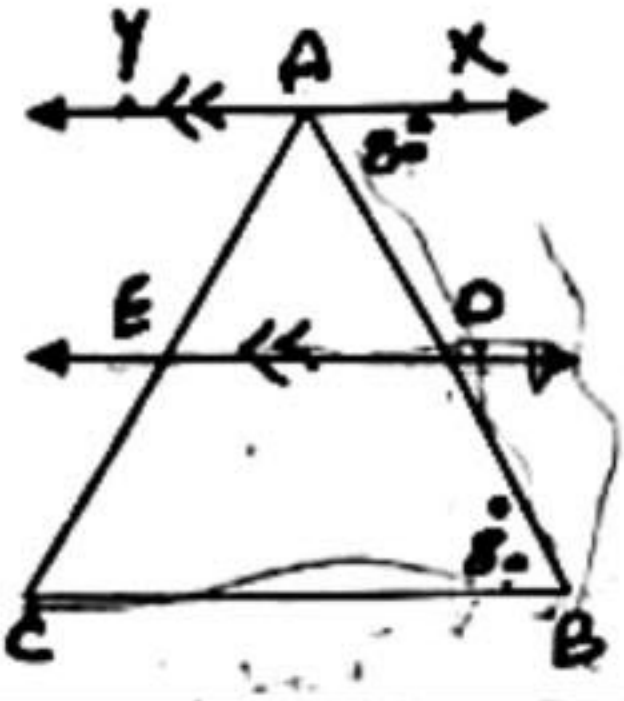
$\overleftrightarrow{XY} // \overleftrightarrow{DE}$

$m(\angle XAB) = 80^0$ , $m(\angle B) = 80^0$

$AD = BD$ , $AC = 10cm$

Is $\overrightarrow{DE} // \overline{BC}$? Why?

Find the length of $\overline{AE}$ give reison

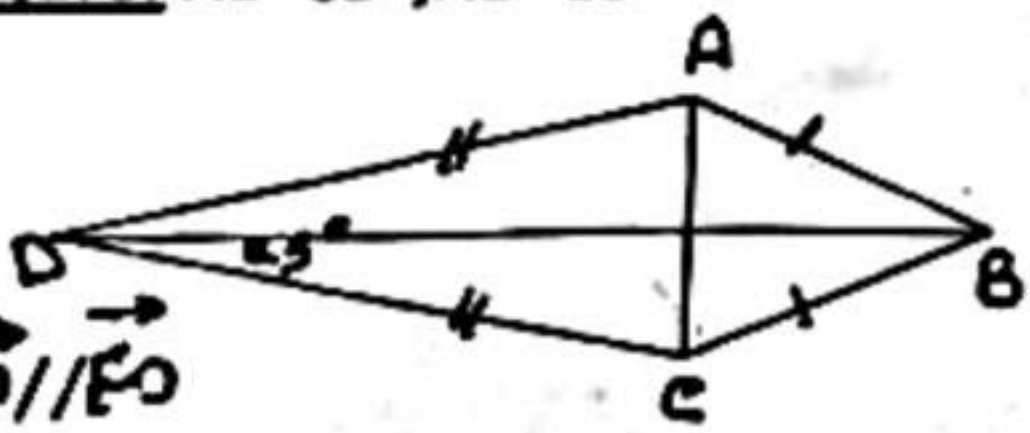



**Question 5)** a) *In the opposite figure:* AB=CB , AD=CD

$m(\angle CDB) = 25^0$

Is $\Delta ABD \equiv \Delta CBD$? Why?

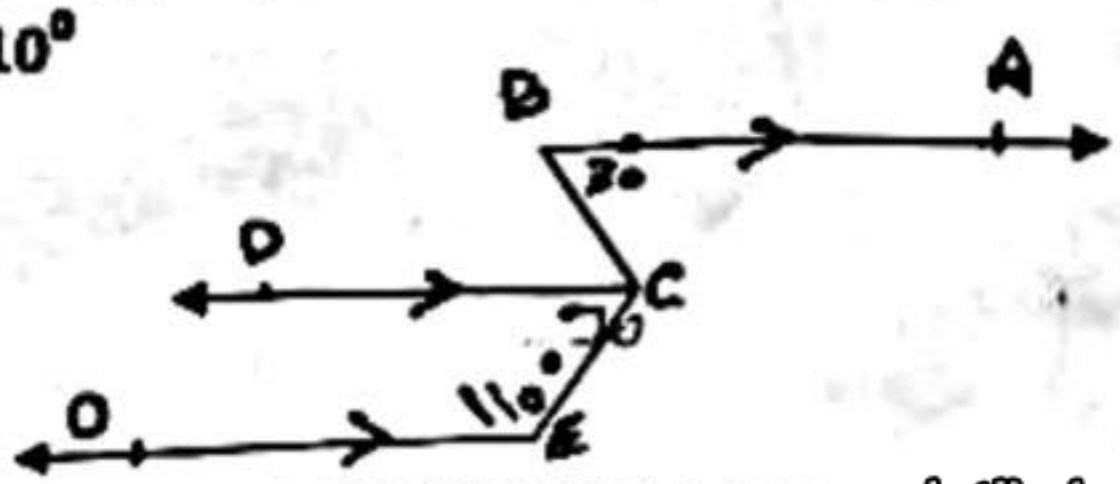
Find m (<ADC)




**b) *In the opposite figure:*** $\overrightarrow{AB} // \overrightarrow{CD} // \overrightarrow{EO}$

$m(\angle ABC) = 30^0$ , $m(\angle CEO) = 110^0$

Find $m(\angle BCE)$



Giza Governorate
Omraniya Directorat of Education
Al FAROUQ LANGUAGE SCHOOL

Department: Maths.
Form: 1st PREP.
( Algebra & Statis.)
Time: 2 hrs.

Midyear Exam (2017 – 2018)

Answer the following:

(1) Complete each of the following:

1) If the rational number $\frac{x-1}{x+5} = 0$, then x = .....

2) The mean of the values : 2 , 3 , 2 , 6 and 7 is .....

3) The rational number which lies half way between $\frac{1}{5}$ and $\frac{2}{3}$ is .....

4) $(2x^3 + x) \div x$ = ..... (where $x \neq$ zero)

5) The algebra term $3x^3y^2$ whose degree is .....

(2) Choose the correct answer:

1) The H.C.F. of $9x^2 + 3x$ is .....

a) 9x  b) 3x  c) $3x^2$  d) x

2) If $\frac{3}{x-5}$ is a rational number , then x ≠ .....

a) 2  b) 3  c) – 5  d) 5

3) The remainder of subtraction – 2x from 5x is .....

a) 3x  b) – 10x  c) 7x  d) – 7x

4) The expression $3x^2y^1 - 6x$ whose degree is .....

a) 1  b) 2  c) 3  d) 4

5) The mode of the values : 4 , 5 , 4 , 3 , 7 , 5 , 4 is .....

a) 3  b) 4  c) 5  d) 7

6) $0.\dot{2}\dot{7}$ in the form of $\frac{a}{b}$ is .....

a) $\frac{27}{100}$ b) $\frac{27}{90}$ c) $\frac{27}{11}$ d) $\frac{3}{11}$

---

(3)A) Find the number that lies one third of the way between $\frac{1}{4}$ and $\frac{7}{8}$ from the side of the smaller one.

B) Use the distribution property to find the value of :

$$\frac{7}{13} \times 6 + \frac{7}{13} \times 8 - \frac{7}{13}$$

---

(4)A) Add: $2X^2 - XY + 5$ to $3X^2 + 2XY - 3$

B) Find the quotient of : $X^2 - 5X + 6$ by $X - 3$ (where $X \neq 3$)

---

) Multiply: $(x - 2)(x + 2)$ , then find the numerical value of t

pression when $x = 3$.

f the arithmetic mean of : $x - 1$ , $x$ , $x + 1$ is 12 , then find

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WITH OUR BEST WISHES,

Sally

Cairo Governorate
El Nozha Ed. Zone
Math. Inspection

first term exam
2017 - 2018

Subject : Algebra
Form : 1st prep
Time : 2 hr

**Answer the following questions :**

**Question (1): Choose the correct answer :**

1) The mode of the values 4 , 5 , 4 , 3, 7 , 4 is .... [3, 4, 5, 7]

2) The result of subtracting -2x from 3x is ..... [5x, -5x, -x, x ]

3) The median of 2 , 5, 6, 7, 9 , 11, 14 , 16 , 21 is ..... [7, 9, 11, 16]

4) The algebraic term $-4xy^5$ is of ..... [third, fourth, sixth, second]

5) The multiplicative inverse of $(\frac{2}{3})^0$ is .... $[\frac{3}{2}, -\frac{2}{3}, 0, 1]$

6) $|-5| - |2| =$ ..... [3, -3, 7, -7]

**Question (2): Complete the following :**

1) If the arithmetic mean of the values 8 , 7, 5 , k + 4 is 6 then k = 2

2) If $\frac{x-5}{x-7} = 0$ , then x = 5

3) The additive inverse of $(-5)^2$ is ..... 25

4) $\frac{3}{5} + \frac{7}{10} + (-\frac{1}{2}) =$ ..... $\frac{4}{5}$

5) $3 \times$ ..... $= 1$

**Question (3) :**

a) Using the distributive property find : $\frac{6}{7} \times 2 + \frac{6}{7} \times 4 + \frac{6}{7}$ .

b) find : $(2x - 3y)(3x + 7y)$ $6x^2 - 21y^2$

**Question (4) :**

a) Divide $(x^3y - 4xy^2 + 6xy)$ by $(xy)$ .

b) Find three rational numbers lies between $\frac{1}{2}$ , $\frac{1}{3}$ . $\frac{21}{60}$ , $\frac{22}{60}$ , $\frac{23}{60}$

( يقيه الأسئله في الصفحه الثانيه )

**Question (5) :**

a) Add : $2x - 7y + z$ , $5z + 6y - 2x$ .

b) The following table shows the marks of a student in exams in 6 months

| Months | Oct. | Nov. | Dec. | Feb | March. | April. |
|---|---|---|---|---|---|---|
| Marks | 30 | 45 | 35 | 40 | 35 | 50 |

Find the arithmetic mean of these marks .

**Good Luck**

Aswan Governorate
Aswan Educational
M. Mekkawy Yacoub language school

Subject : Algebra
Year : First prep
Time : 2h

# First term Exam

**Answer the following question**

**Question one : Choose the correct answer from those given**

a) The algebraic term $6x^3y^2$ is of ..... Degree .
1) third 2) fourth 3) fifth 4) sixth

b) If $0.18 + 30\%$
1) $+12$ 2) 0.15 3) 48 % 4) 45%

c) The mode of the value 7 , 5 , x + 4 , 5 , 7 is 5 , then x = .....
1) 4 2) 5 3) 7 4) 1

d) The remainder of subtracting $-7x$ from $9x$
1) $16x$ 2) $2x$ 3) $-2x$ 4) Zero

e) The rational number that lies on third of the way between 8 and 12 from the smaller .
1) $8\frac{1}{3}$ 2) 10 3) $9\frac{1}{3}$ 4) $10\frac{2}{3}$

f) $(2x-3)(x+5) = 2x^2$ .....$-15$
1) $-7x$ 2) $+7x$ 3) $-13x$ 4) $+13x$

**Question two : complete**

a) $5x^2 + 15xy = 5x($ ...x... + ...3... $)$

b) $(x-3)($ ...x... + ...3... $) = x^2 - 9$

c) The number $\frac{4}{x}$ is a rational number if $x \neq$ .....

d) $24x^4y^6 = 6x^2y^2 \times$ .....

e) $2\frac{1}{5} \times$ ..... $= 1$

**Question Three :**

a) Simplify the simplest form $(2x-3)(2x+3)+7$ and calculate t

numerical value of the result when $x = 1$

b) Use the distribution property find the value :

$$\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$$

## Question four :

a) Divide $2x^2 + 13x + 15$ by $x + 5$

b) Factorize by identifying the H . C . F $12a^2b + 18a^3b^2$

## uestion five :

ıe following table shows Gehad's marks of mathematics in 6 mon

| onth | October | November | December | February | Martch |
|---|---|---|---|---|---|
| arts | 30 | 35 | 42 | 37 | 44 |

ıd :

a) The median for the previous marks .

b) The mean for the previous marks .

Good Luck

$$\frac{12a^2b+18}{6a^2b}$$

$$= 2 + 3ab$$

First Term Exam
First Year Prep
Algebra & Statistics

Damietta Governorate
January 2022
Time : 2 Hour

Answer the Following questions:

Q(1) Choose the correct answer from those given :

(1) If $\frac{5}{x+2}$ is a rational number ,then $x \neq$ .....

(a) - 2 (b) 0 (c) 2 (d) 5

(2) The algebraic term : $2x^3$ is of the ..... Degree.

(a) second (b) third (c) fourth (d) fifth

(3) The median of the values : 5 , 7 , 11 , 3 , 9 is .....

(a) 5 (b) 7 (c) 9 (d) 11

(4) The value of number 5 in the number 0.2457 is .....

(a) $\frac{5}{10}$ (b) $\frac{5}{100}$ (c) $\frac{5}{1000}$ (d) $\frac{5}{10000}$

(5) If $(x-7)(x+7) = x^2 + m$ , then m = .....

(a) 0 (b) 14 (c) 49 (d) $-49$

(6) The number of rational numbers lying between $\frac{1}{5}$ , $\frac{3}{5}$ is .....

(a) 1 (b) 2 (c) 3 (d) infinite number

Q (2) Complete the following :

(1) If $\frac{3}{4} + x = 0$ then $x =$ .....

(2) 7.1 kilogram = .....gram

(3) The remainder of subtracting - 3 A from 2A is 5A

(4) If The mode of the values 8 , 9 , K+2 , 6 is 8 then K = .....

(5) $(10y^5 - 2y^2) \div 2y^2 =$ ..... (where $y \neq 0$)

Q (3)( a ) Add : $2x + 3y - 3$ and $5x - 2y + 1$

( b ) Using the distribution property , find : $\frac{5}{12} \times 7 + \frac{5}{12} \times 6 - \frac{5}{12}$

Q (4) ( a ) Reduce to the simplest form : $(x+2)^2 - 4x$ then find the numerical value of the result when $x = 3$

(b) Factorize by identifying the highest common factor : $5y^3 + 35xy$

Q (5) ( a ) Find the quotient of : $x^2 + 7x + 10$ by $x + 5$ (where $x \neq -5$)

(b) The following table shows the marks of a student in maths :

| Month | October | November | December | February | March | April |
|---|---|---|---|---|---|---|
| Mark | 25 | 25 | 29 | 25 | 28 | 30 |

Find: (1) The mode mark (2) The arithmetic mean of these marks

إنتهت الأسئلة